BOSCH INJ. PUMP TEST SPECIFICATIONS I Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 1 G 11 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition : 12.09.86 : 9.84 Superceeded Calibrating oil : ISO-4113 BASIC SETTING : 0 400 464 130 Combination no. 1st speed 1/mi: 1175 Injection pump Pump designation : PES4A80D410/3RS1300 Contr.-rod trav.mm: 10.80...10.90 EP type number : 0 410 484 015 Del.quantity cm3/: 5.2...5.3 Governor : RSV325...1150A8C2163 Governor design. 100H.: (5.0...5.4) -2L : 0 420 232 429 Governer no. Dispersion cm3/:0.2Customer-spec. information Customer 100H.: (0.4) : KHD Engine : F4L912 2nd speed 1/min: 325.0 Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 0.9...1.5 100H.: (0.8...1.7) Dispersion cm3/: 0.2 100H.: (0.3) 1st version kW : 51.0 Speed 1/min: 2300 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Inlet press., bar: 1.00 Notch setting x : 3.25 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening. 1st version pressure, bar Speed 1/min: 1175 Del.quantity cm3/: 52.0...53.0 : 172...175 1000H.: (50.5...54.5) cm3/ : 2.50 Test inj. tubing : 1 680 750 014 Dispersion 1000H.: (4.00) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00X2.00X600 1st version Control-lever (A) Injection pump setting values position degrees: 53...61 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm: 9.80 Speed 1/min: 1215...1225 2nd c-rod trav.mm: 4.00 START OF DELIVERY Speed 1/min: 1255...1285 Test pressure, bar: 25...27 3rd c-rod trav.mm : 0.30...1.40 Speed 1/min: 1400 Prestroke mm : 1.90...2.00 : (1.85...2.05) 4th speed 1/min: 1275...1305 A01

C-rod trav.mm : 4.00 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Setting point w/out aux. spring Speed 1/min : 325 Contr.-rod trav.mm: 8.2 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 Speed 1/min : 325 C-rod trav.mm : 8.60...8.80 C-rod trav.mm : 2.00 Speed 1/min : 460...520 TORQUE CONTROL Dimension a mm : 1.20 Torque-control curve - 1st version 1st speed 1/min: 1175 C-rod trav.mm : 10.80...10.90
2nd speed 1/min : 500
C-rod trav.mm : 12.00...12.10
4th speed 1/min : 1005
C-rod trav.mm : 11.10...11.30 FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/: 51.5...53.5 1000H.: (49.5...55.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 1 G 21 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition : 12.09.86 Superceeded : ISO-4113 Calibrating oil BASIC SETTING : 0 400 464 131 Combination no. 1st speed 1/mi: 1175 Injection pump Pump designation : PES4A80D410/3RS1300 Contr.-rod trav.mm: 9.60...9,70 EP type number : 0 410 484 015 Governor Del.quantity cm3/: 5.0...5.1 Governor design. : RSV325...1175A8C657-2L 100H.: (4.9...5.3) : 0 420 232 458 Governer no. Dispersion cm3/:0.2Customer-spec. information Customer : KHD 100H.: (0.4) 2nd speed 1/min: 325.0 Contr.-rod trav. m: 7.9...8.1 Del.quantity cm3/: 1.0...1.6 100H.: (0.8...1.7) Engine : F4L912 1st version kW : 48.0 Speed 1/min: 2350 cm3/: 0.2 100H.: (0.3) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Inlet press., bar: 1.00 Notch setting x : 4.00 Calibrating nozzle-holder assembly : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening. 1st version Speed 1/min: 1175
Del.quantity cm3/: 50.5...51.5
1000H.: (49.0...53.0)
Dispersion cm3/: 2.50 pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 1000H.: (4.00) Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 45...53 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm : 8.60 Speed 1/min : 1215...1225 2nd c-rod trav.mm : 4.00 Speed 1/min : 1225...1255 3rd c-rod trav.mm : 0.30...1.40 START OF DELIVERY Test pressure, bar: 25...27 Speed 1/min: 1415 : 1.90...2.00 Prestroke mm : (1.85...2.05) 1/min: 1250...1280 4th speed A03

C-rod trav.mm : 4.00 LOWEST RATED SPEED I Control-lever position degrees: 10...18 Setting point w/out aux. spring Speed 1/min: 325 Contr.-rod trav.mm: 7.5 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 1/min : 325 Speed : 7.90...8.10 C-rod trav.mm : 2.00 C-rod trav.mm 1/min: 435...495 Speed TORQUE CONTROL Dimension a mm : 1.10 Torque-control curve - 1st version 1st speed 1/min: 1175 C-rod trav.mm : 9.60...9.70 2nd speed 1/min: 500 C-rod trav.mm: 10.70...10.80 3rd speed 1/min: 1000 C-rod trav.mm : 10.20...10.40 FUEL-DELIVERY CHARACTERISTICS 1/min: 800 Speed

Del.quantity cm3/: 52.0...54.0 1000H:: (50.0...56.0) Speed 1/min: 1000 Del.quantity cm3/: 52.5...54.5

1000H.: (50.5...56.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 1 G 25 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition : 20.10.86 Superceeded Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 464 132 1/mi: 1175 1st speed Injection pump Pump designation : PES4A80D410/3RS1349 Contr.-rod trav.mm: 10.10...10.20 EP type number : 0 410 484 021 Del.quantity cm3/: 5.7...5.8 Governor Governor design. : RSV325...1175A8C0657 100H.: (5.6...6.0) -3L Governer no. : 0 420 232 469 Dispersion cm3/:0.2Customer-spec. information 100H.: (0.4) Customer : KHD 1/min: 325.0 Engine : F4L912 2nd speed Contr.-rod trav. m: 6.8...7.0 Del.quantity cm3/: 1.0...1.6 100H:: (0.8...1.7) Dispersion cm3/: 0.2 1st version kW : 51.0 Speed 1/min: 2350 100H.: (0.3) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. <sup>D</sup>C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 Overflow valve 17min: 800 Cont.-rod travelmm: 0.30...0.70 : 1 417 413 000 Inlet press., bar : 1.00 Governor-spring reload Notch setting x : 4.00 Calibrating nozzle-holder assembly : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Opening Speed 1/min: 1175
Del.quantity cm3/: 57.5...58.5
1000H.: (56.0...60.0)
Dispersion cm3/: 2.50 pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 1000H.: (4.00) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00x2.00x600 1st version Control-lever (A) Injection pump setting values position degrees: 48...56 Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm: 9.10 Speed 1/min: 1215...1225 2nd c-rod trav.mm: 4.00 Speed 1/min: 1240...1270 3rd c-rod trav.mm: 4.00 per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 1/min: 1255...1270 Speed Prestroke mm : 1.90...2.00 4th speed 1/min: 1415 : (1.85...2.05)

A05

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever

position degrees: 13...21 Setting point w/out aux. spring

1/min : 325 Speed Contr.-rod trav.mm: 5.5

Testing:

1/min : 100 Speed C-rod trav.mm min: 19.50 1/min : 325 Speed

: 5.90...6.10 : 2.00 C-rod trav.mm

C-rod trav.mm

Speed 1/min : 460...520

TORQUE CONTROL

Dimension a mm : 0.85

Torque-control curve - 1st version

1st speed 1/min: 1175

C-rod trav.mm : 10.10...10.20 2nd speed 1/min : 500

C-rod trav.mm : 11.00...11.10

4th speed 1/min: 870

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 800 Del.quantity cm3/: 54.0...56.0

1000H.: (52.0...58.0)

Remarks:

: DX3.70

**APPLICATION** 

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column : DAF 8,3 K Test sheet Edition : 12.09.86 Superceeded : 10.85 Calibrating oil : ISO-4113 Combination no. : 0 400 646 252 Injection pump Pump designation : PE6A95D410RS2525 EP type number : 0 410 696 987 Governor Governor design. : RQ225/1200AB1007L Governer no. : 0 420 200 060 Customer-spec. information Customer : DAF Engine : DHR/DHTD 825 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 : 2.00...2.10 Prestroke mm : (1.95...2.15) Contr.-rod trav.mm: 7.50...10.50 Cam sequence : 1-5-3-6-2-4

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) SD mark cyl. no. : 1 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 & c-rod tray max. : 21.0 Difference CS : 3.00...4.00 BASIC SETTING 1st speed 1/mi: 1000 Contr.-rod trav.mm: 12.60...12.70 Del.quantity cm3/: 10.9...11.0 100H.: (10.7...11.2) Dispersion cm3/:0.3100H.: (0.6) 1/min: 225.0 2nd speed Contr.-rod trav. m: 5.7...5.9

Del.quantity cm3/: 0.7...1.2

100H.: (0.4...1.4)

Dispersion cm3/: 0.3

100H.: (0.5) SLEEVE POSITION Control-lever position Degree: -2 1/min: 650 Speed Cont.-rod travelmm: 19.20...20.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1000 Charge press. hPa: 700 Del.quantity cm3/: 109.0...110.0 1000H.: (107.0...112.0) Dispersion cm3/: 3.50 1000H.: (6.00) HIGHEST RATED SPEED Setting point: Speed 1/min : 650 Contr.-rod trav.mm: 20.0 Testing: 1st c-rod trav.mm : 11.60 Speed 1/min: 1230...1245 2nd c-rod trav.mm: 4.00 Speed 1/min: 1315...1345

4th speed 1/min: 1390 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min: 225 Contr.-rod trav.mm: 5.8 Testing: 1/min : 100 Speed C-rod trav.mm min : 7.20 Speed 1/min : 225 : 5.70...5.90 C-rod trav.mm C-rod trav.mm : 2.00 1/min: 340...380 Speed 1/min : 450 Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Dimension a mm Torque-control curve - 1st version 1st speed 1/min : 1000 C-rod trav.mm : 12.60...12.70 2nd speed 1/min : 1200 C-rod trav.mm : 12.50...12.70 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 1000 Speed Pressure hPa : 700 Contr.-rod trav.mm: 12.60...12.70 Measurement 1/min : 1000 Speed 1st pressure hPa : 300 C-rod trav.mm : 12.30...12.40 2nd pressure hPa : 260 C-rod trav.mm : 11.70...12.00 3rd pressure hPa : -C-rod trav.mm : 11.50...11.60 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed 1/min : 600 Del.quantity cm3/: 85.5...86.5 1000H.: (83.5...88.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Test sheet : DAF 6,2 I : 12.09.86 : 4.86 Edition Superceeded SD mark cyl. no. : 1 : ISO-4113 Calibrating oil START OF DELIVERY DIFFERENCE : 0 400 646 256 Combination no. betw.c-rod trav.mm: 8.50...9.50 Difference CS : 2.50...3.50 Injection pump Pump designation : PE6A90D32ORS2547 EP type number : 0 410 696 180 BASIC SETTING Governor Governor design. : RQ250/1200AB1022R 1/mi: 1000 1st speed Governer no. : 0 420 201 619 Contr.-rod trav.mm: 10.80...10.90 Customer-spec. information Customer : DAF Del.quantity cm3/ : 7.1...7.2 Engine : DT615 100H.: (6.9...7.4) 1st version kW Dispersion cm3/:0.3TEST BENCH REQUIREMENTS 190H.: (0.4) Calibrating-cil inlet temp. C 1/min: 250.0 2nd speed : 38...42 Contr.-rod trav. m: 6.9...7.1 Del.quantity cm3/: 1.1...1.5 Overflow valve 100H.: (0.9...1.7) cm3/: 0.2 100H.: (-) : 1 417 413 000 Dispersion Inlet press., bar : 1.00 SLEEVE POSITION Control-lever position Calibrating nozzle-holder : 0 681 343 009 assembly Degree: -2 17min: 650 Cont.-rod travelmm: 19.20...20.80 Opening. pressure, bar : 172...175 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 015 1st version 1/min: 1000 Speed Outside diameter Charge press. hPa: 700 Del.quantity cm3/: 71.5...72.5 1000H:: (69.5...74.5) Dispersion cm3/: 3.00 x Wall thickness : 6.00x1.50x600 x Length mm 1000H.: (4.50) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED per values \_\_\_\_ Setting point: START OF DELIVERY 1/min : 650 Test pressure, bar: 25...27 Contr.-rod trav.mm: 20.0 : 2.20...2.30 Prestroke mm Testing: : (2.15...2.35) 1st c-rod trav.mm : 9.80 Speed 1/min: 1245...1265 2nd c-rod trav.mm: 4.00 Contr.-rod trav.mm: 7.50...10.50 : 1-5-3-6-2-4 Cam sequence A09

Speed 1/min : 1340...1370 4th speed 1/min: 1500 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 250 Contr.-rod trav.mm: 7.0 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.50 1/min : 250 Speed C-rod trav.mm : 6.90...7.10 C-rod trav.mm : 2.00 1/min: 380...420 Speed 1/min : 510 Speed C-rod trav.mm max: 1.00 compensator (LDA,ADA,ALDA) 1st version Setting 1/min: 1000 Speed Pressure hPa : 700 Contr.-rod trav.mm: 10.80...10.90 Measurement 1/min : 1000 Speed 1st pressure hPa : -C-rod trav.mm : 9.80...10.00 2nd pressure hPa : 200 C-rod trav.mm : 10.60...10.70 3rd pressure hPa : 120 C-rod trav.mm : 9.90...10.10 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 51.5...53.5 1000H:: (49.5...55.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column : DAF 8,3 K 2 Test sheet SD mark cyl. no. : 1 : 12.09.86 Edition : 4.86 Superceeded START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 8.50...9.50 & c-rod tray max. : 21.0 Difference CS : 3.00...4.00 Combination no. : 0 400 646 268 Injection pump Pump designation : PE6A95D41ORS2525 BASIC SETTING EP type number : 0 410 696 987 Governor 1st speed 1/mi: 1200 Governor design. : RQZ25/1200AB1156L Governer no. Contr.-rod trav.mm: 10.40...10.50 : 0 420 200 079 Del.quantity cm3/ : 7.3...7.5 Customer-spec, information Customer : DAF 100H.: (7.1...7.7) : DH 825 Engine cm3/:0.3Dispersion TEST BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. OC 2nd speed 1/min: 225.0 Contr.-rod trav. m: 5.9...6.1 : 38...42 Overflow valve Del.quantity cm3/: 0.7...1.1 : 1 417 413 000 100H.: (0.4...1.3) cm3/: 0.3 Dispersion 100H.: (0.5) Inlet press., bar: 1.50 SLEEVE POSITION Calibrating nozzle-holder : 0 681 343 009 assembly Control-lever position Degree: -2 1/min: 650 Speed Openina pressure, bar : 172...175 Cont.-rod travelmm: 19.20...20.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 015 1st version Outside diameter 1/min: 1200 Speed Del.quantity cm3/ : 73.0...75.0 x Wall thickness 1000H.: (71.0...77.0) cm3/ : 3.50 1000H.: (6.00) : 6.00x1.50x600 x Length man Dispersion (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED per values \_\_\_\_ Setting point: START OF DELIVERY 1/min : 650 Speed Contra-rod trav.mm: 20.0 Test pressure, bar: 25...27 : 2.00...2.10 Prestroke mm Testing: : (1.95...2.15) 1st c-rod trav.mm: 9.40 Contr.-rod trav.mm: 7.50...10.50 1/min : 1245...1260 Speed Cam sequence : 1-5-3-6-2-2nd c-rod trav.mm : 4.00 1/min : 1300...1330 Speed 1/min: 1400 4th speed

C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min : 225 Contr.-rod trav.mm: 6.0 Testing: Speed 1/min : 100 C-rod trav.mm min: 7.50 1/min : 225 Speed .mm : 5.90...6.10 .mm : 2.00 1/min : 345...385 1/min : 490 C-rod trav.mm C-rod trav.mm Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1200 C-rod trav.mm : 10.40...10.50

Dimension a mm : 0.35

2nd speed 1/min : 650

C-rod trav.mm : 11.30...11.40

4th speed 1/min: 1035

C-rod trav.mm : 10.90...11.10

5th speed 1/min: 1100

C-rod trav.mm : 10.50...10.80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 800

Del.quantity cm3/ : 74.5...77.5

1900H.: (72.0...80.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column : DAF 6,2 I 7 Test sheet SD mark cyl. no. : 1 Edition : 12.09.86 Superceeded : 10.85 START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 8.50...9.50 Difference CS: 2.50...3.50 Combination no. : 0 400 646 274 Injection pump BASIC SETTING Pump designation : PE6A90D320RS2547 EP type number : 0 410 696 180 1st speed 1/mi: 1000 Governor Governor design. : RQ250/1250AB1212R Contr.-rod trav.mm: 10.30...10.40 Governer no. : 0 420 201 644 Del.quantity cm3/: 6.3...6.4 Customer-spec. information 100H.: (6.1...6.6) Customer : DAF Engine : DT615V cm3/:0.3Dispersion TEST BENCH REQUIREMENTS 100H.: (0.5) Calibrating-oil inlet temp. °C 1/min: 250.0 2nd speed : 38...42 Contr.-rod trav. m: 6.1...6.3 Del.quantity cm3/: 1.0...1.4 100H.: (0.8...1.6) Dispersion cm3/: 0.2 100H.: (0.4) Overflow valve : 1 417 413 000 Inlet press., bar: 1.50 SLEEVE POSITION Calibrating nozzle-holder Control-lever position : 0 681 343 009 assembly Degree: -2 Speed 1/min: 500 Cont.-rod travelmm: 19.20...20.80 Opening pressure, bar : 172...175 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 015 1st version 1/min: 1000 Speed Del.quantity cm3/: 63.0...64.0 1000H: (61.0...66.0) Dispersion cm3/: 3.00 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm 1000H.: (5.00) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED per values Setting point: Speed 1/min: 500 Contr.-rod trav.mm: 20.0 START OF DELIVERY Test pressure, bar: 25...27 Testing: : 2.20...2.30 Prestroke mm 1st c-rod trav.mm : 9.30 : (2.15...2.35) Contr.-rod trav.mm: 7.50...10.50 Speed 1/min: 1285...1300 2nd c-rod trav.mm : 4.00 1/min: 1340...1370 Cam sequence : 1-5-3-6-2-4 Speed LOWEST RATED SPEED I

Setting point w/out aux. spring Speed 1/min: 250

Contr.-rod trav.mm: 6.2

Testing:

Speed 1/min: 100 C-rod trav.mm min: 7.70

Speed 1/min: 250 C-rod trav.mm: 6.10...6.30 C-rod trav.mm: 2.00 Speed 1/min: 295...335

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1250 C-rod trav.mm: 10.50...10.60 2nd speed 1/min: 500

C-rod trav.mm : 10.50...10.70

SWITCH-OVER POINT

Speed 1/min: 100 (80)

BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence : 1- 6- 5- 4- 3- 2 Note inst. in remarks column SD ang. spacing CS: 0-75-120-195-240-315 Tolerance + - : 0.50 (0.75) : KHD 9,6 I 2 Test sheet Edition : 12.09.86 Superceeded Calibrating oil : ISO-4113 SD mark cyl. no. : 1 Combination no. : 0 400 646 275 BASIC SETTING Injection pump 1st speed 1/mi: 1250 Pump designation : PE6A95D410LS2621 EP type number : 0 410 696 982 Contr.-rod trav.mm: 10.40...10.50 Governor Governor design. : RQ300/1250AB1148-1L Del.quantity cm3/: 9.4...9.6 Governer no. : 0 420 200 104 100H.: (9.2...9.8) Customer-spec. information : KHD Customer cm3/:0.3Dispersion : F6L413F Engine 100H.: (0.6) 1st version kW : 141.0 1/min: 300.0 2nd speed 1/min: 2500 Contr.-rod trav. m: 6.4...6.6 Speed Del.quantity cm3/: 0.8...1.4 100H.: (0.5...1.6) Dispersion cm3/: 0.3 100H.: (0.5) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C : 38...42 SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 000 Degree: -2 Speed 17min: 600 Inlet press., bar: 1.00 Cont.-rod travelmm: 19.20...20.80 Calibrating nozzle-holder FULL-LOAD DELIV. AT FULL-LOAD STOP : 0 681 343 009 assembly 1st version 1/min: 1250 Opening. Speed Del.quantity cm3/: 94.0...96.0 1000H: (92.0...98.0) Dispersion cm3/: 3.50 pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 1000H.: (6.00) HIGHEST RATED SPEED Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm Setting point: 1/min : 600 Speed Contr.-rod trav.mm: 20.0 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm: 9.40 Speed 1/min: 1295...1310 START OF DELIVERY 2nd c-rod trav.mm : 4.00 Test pressure, bar: 25...27 1/min : 1325...1355 Speed : 2.00...2.10 Prestroke mm LOWEST RATED SPEED I : (1.95...2.15) Setting point w/out aux. spring Contr.-rod trav.mm: 9.00...12.00 1/min : 300 Speed A15

Contr.-rod trav.mm: 6.5 Testing: Speed 1/min : 100 C-rod trav.mm min : 7.90 Speed 1/min : 300 C-rod trav.mm : 6.40...6.60 C-rod trav.mm : 2.00 1/min : 340...380 Speed TORQUE CONTROL Dimension a mm : 0.30 Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 10.40...10.50

2nd speed 1/min: 600

C-rod trav.mm : 11.20...11.30 3rd speed 1/min : 935

C-rod trav.mm : 11.00...11.20

4th speed 1/min: 1050

C-rod trav.mm : 10.50...10.70

FUEL-DELIVERY CHARACTERISTICS

 $1/\min : 650$ Speed

Del.quantity cm3/: 93.5...96.5 1000H.: (91.0...99.0)

```
: 1- 8- 7- 2- 6- 5- 4-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                    : KHD 12.7 P
                                                      $D ang. spacing CS: 0-45-90-135-180-225-
Edition
                    : 12.09.86
                    : 9.84
                                                                            270-315
Superceeded
Calibrating oil : ISO-4113
                                                      Tolerance + - 0
                                                                          : 0.50 (0.75)
Combination no.
                    : 0 400 648 128
                                                      SD mark cyl. no. : 1
Injection pump
                                                      BASIC SETTING
Pump designation : PE8A95D410LS2608
EP type number
                   : 0 410 698 988
                                                      1st speed
                                                                     1/mi: 1100
Governor
Governor design.
Governer no.
                   : RQV300...1100AB1126L
                                                      Contr.-rod trav.mm: 10.00...10.10
                    : 0 420 212 140
                                                      Del.quantity cm3/: 8.9...9.1
Customer-spec. information
                                                                    100H.: (8.7...9.3)
Customer
                    : KHD
                    : F8L413F
Engine
                                                      Dispersion
                                                                    cm3/: 0.3
1st version kW : 133.0
                                                                    100H.: (0.6)
              1/min: 2200
Speed
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.4...6.6
TEST BENCH REQUIREMENTS
                                                      Del.quantity cm3/: 1.2...2.0
100H.: (0.9...2.2)
Dispersion cm3/: 0.5
100H.: (0.7)
Calibrating-oil inlet temp. <sup>D</sup>C
                    : 38...42
Overflow valve
                    : 1 417 413 000
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Inlet press., bar: 1.00
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 300
Sleeve travel mm: 0.70...0.80
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                      2nd speed 1/min: 450
                                                        Sleeve travel mm: 1.90...2.20
Opening.
 pressure, bar : 172...175
                                                                   1/min: 950
                                                      3rd speed
                                                        Sleeve travel mm: 6..0...6.60
                                                      4th speed 1/min 1215
Sleeve travel mm: 5.50...9.10
                   : 1 680 750 014
Test inj. tubing
Outside diameter
                                                      SLEEVE POSITION
x Wall thickness
                                                      Control-lever position
                   : 6.00X2.00X600
x Length mm
                                                                   Degree: -1
                                                      Speed
                                                                    17min: 1175
(A) Injection pump setting values
                                                      Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
START OF DELIVERY
                                                                    1/min: 1100
                                                      Speed
                                                      Del.quantity cm3/: 89.0...91.0
Test pressure, bar: 25...27
                                                                   1000H.: (87.0...93.0)
cm3/ : 3.50
1000H.: (6.00)
Prestroke mm
                    : 2.00...2.10
                                                      Dispersion
                    : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
A17
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 48...56
Testing:
1st c-rod trav.mm : 9.00
  Speed 1/min: 1140...1150
2nd c-rod trav.mm: 4.00
  Speed
            1/min : 1200...1230
1/min : 1350
4th speed
  C-rod trav.mm : 0...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...20
Testing:
            1/min: 100
Speed
C-rod trav.mm min: 8.00
Speed 1/min: 300
                  : 6.40...6.60
C-rod trav.mm
CONSTANT REGULATION
            1/min : 415...535
Speed
TORQUE CONTROL
Dimension a mm : 0.50
Torque-control curve - 1st version
1st speed 1/min : 1100
  C-rod trav.mm : 10.00...10.10
2nd speed 1/min: 500
 C-rod trav.mm : 10.50...10.60
3rd speed 1/min : 760
C-rod trav.mm : 10.30...10.50
4th speed 1/min: 890
  C-rod trav.mm : 10.00...10.20
SWITCH-OVER POINT
Speed
            1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
Speed
            1/min : 650
Del.quantity cm3/: 90.5...93.5
1000H:: (88.0...96.0)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS	Cam sequence : 1-8-7-2-6-5-
Note inst. in remarks column	4- 3
Test sheet : KHD 12.7 N   Edition : 12.09.86   Superceeded : 11.85   Calibrating oil : ISO-4113	SD ang. spacing <sup>0</sup> CS: (1-45-90-135-180-225- 270-315 Tolerance + - <sup>0</sup> : 0.50 (0.75)
Combination no. : 0 400 648 129	SD mark cyl. no. : 1
Injection pump Pump designation : PE8A95D410LS2609 EP type number : 0 410 698 987	BASIC SETTING 1st speed 1/mi: 1250
Governor design.: RQV3001250AB1128L   Governer no.: 0 420 212 141	Contrrod trav.mm: 11.6011.70
Customer-spec. information	Del.quantity cm3/: 11.912.1
Customer : KHD	100H.: (11.712.3)
Engine : BF8L413F	Dispersion cm3/: 0.3
1st version kW : 235.0 Speed 1/min: 2500	100H.: (0.6)
TEST BENCH REQUIREMENTS	2nd speed 1/min: 300.0 Contrrod trav. m: 6.46.6 Del.quantity cm3/: 1.62.2
Calibrating-oil inlet temp. C : 3842	100H.: (1.32.4) Dispersion cm3/: 0.3 100H.: (0.5)
Overflow valve : 1 417 413 000	(B) Setting of injection pump with externally-mounted governor
Inlet press., bar : 1.00	SLEEVE TRAVELS
Calibrating nozzle-holder assembly : 0 681 343 009	1st speed 1/min: 320 Sleeve travel mm: 1.701.90 2nd speed 1/min: 600
Opening pressure, bar : 172175	Sleeve travel mm: 3.003.20  3rd speed
Test inj. tubing : 1 680 750 014	Sleeve travel mm: 8.408.50
Outside diameter  x Wall thickness  x Length mm : 6.00x2.00x600	SLEEVE POSITION Control-lever position Degree: -1 Speed 1/min: 1300
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values	Controd travelmm: 15.2017.80  FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY Test pressure, bar: 2527	1st version Speed 1/min: 1250 Charge press. hPa: 700 Del.quantity cm3/: 119.0121.0
Prestroke mm : 1.801.90 : (1.751.95)	1000H.: (117.0123.0) Dispersion cm3/: 3.50
Contrrod trav.mm: 9.0012.00	1000H.: (6.00)
A19	

HIGHEST RATED SPEED 1st version Control-lever position degrees: 61...69 Testing: 1st c-rod trav.mm : 10.60 Speed 1/min : 1290...1300 2nd c-rod trav.mm : 4.00 Speed 1/min: 1380...1410 th speed 1/min: 1450 C-rod trav.mm: 0.00...1.00 4th speed LOWEST RATED SPEED I Control-lever position degrees: 10...18 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.00 1/min : 300 Speed C-rod trav.mm : 6.40...6.60 CONSTANT REGULATION 1/min : 315...420 Speed TORQUE CONTROL Dimension a mm : 0.75 Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 11.60...11.70 2nd speed 1/min: 750 C-rod trav.mm : 12.30...12.40 3rd speed 1/min: 960 C-rod trav.mm : 12.20...12.40 4th speed 1/min: 1090 C-rod trav.mm : i1.70...12.00 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.30...12.40 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 11.30...11.40 2nd pressure hPa : 270 C-rod trav.mm : 12.10...12.20 3rd pressure hPa : 225 C-rod trav.mm : 11.50...11.70 SWITCH-OVER POINT Speed 1/min : 220 (240)

A20

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 700 1/min : 750 Speed

Del.quantity cm3/: 124.5...127.5 1000H.: (122.0...130.0)

Charge press. hPa : -

Speed 1/min: 500 Del.quantity cm3/: 105.0...107.0 1000H.: (103.0...109.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : KHD 12,7 P2 : 12.09.86 Edition Superceeded : 9.85 Calibrating oil : ISO-4113 Combination no. : 0 400 648 141 Injection pump Pump designation : PE8A9SD410LS2608 EP type number : 0 410 698 988 Governor Governor design. : RQV300...1250AB1195L Governer no. : 0 420 212 172 Customer-spec. information Customer : F8L413F Engine 1st version kW : 188.0 \$peed 1/min: 2500 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar: 1.00 Calibrating nozzle-holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 : 2.00...2.10 Prestroke mm : (1.95...2.15) Contr.-rod trav.mm: 9.00...12.00

: 1- 8- 7- 2- 6- 5- 4-Cam sequence Dispersion cm3/ : 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version SD ang. spacing CS: 0-45-90-135-180-225-Control-lever 270-315 position degrees: 47...55 Tolerance + - 0 : 0.50 (0.75) Testing: SD mark cyl. no. : 1 1st c-rod trav.mm: 9.40 1/min : 1290...1300 Speed 2nd c-rod trav.mm : 4.50 Speed 1/min : 1360...1390 4th speed 1/min : 1500 BASIC SETTING 1/mi: 1250 1st speed C-rod trav.mm : 0.30...1.00 Contr.-rod trav.mm: 10.40...10.50 LOWEST RATED SPEED I Del.quantity cm3/: 9.4...9.6 Control-lever position degrees: 14...22 100H.: (9.2...9.8) Testing: cm3/:0.3Dispersion 1/min : 100 Speed C-rod trav.mm min: 8.00 Speed 1/min: 300 100H.: (0.6) C-rod trav.mm : 6.50...6.70 2nd speed 1/min: 300.0 Contr.-rod trav. m: 6.5...6.7 CONSTANT REGULATION Del.quantity cm3/: 0.8...1.4 100H.: (0.5...1.6) Dispersion cm3/: 0.3 100H.: (0.5) Speed 1/min : 375...485 TORQUE CONTROL Dimension a mm : 0.50 Torque-control curve - 1st version (B) Setting of injection pump with 1st speed 1/min: 1250 externally-mounted governor C-rod trav.mm : 10.40...10.50 2nd speed 1/min: 500 SLEEVE TRAVELS C-rod trav.mm : 10.90...11.00 1st speed 1/min: 300
Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 500
Sleeve travel mm: 2.80...3.00 3rd speed 1/min: 850 C-rod trav.mm : 10.70...10.90 4th speed 1/min: 950 C-rod trav.mm : 10.50...10.70 3rd speed 1/min: 1000 Sleeve travel mm: 6.50...6.70 SWITCH-OVER POINT 4th speed 1/min: 1290 1/min : 220 (240) Speed Sleeve travel mm: 8.60...8.80 5th speed 1/min: 1375 Sleeve travel mm: 9.40...9.60 FUEL-DELIVERY CHARACTERISTICS 1/min : 650 Speed Del.quantity cm3/: 93.5...96.5 1000H.: (91.0...99.0) SLEEVE POSITION Control-lever position Degree: -1 17min: 1275 Cont.-rod travelmm: 15.20...17.80 Remarks: FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1250 Speed

Del.quantity cm3/: 94.0...96.0

1000H.: (92.0...98.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 : 1-8-7-2-6-5-4-3 Cam sequence Note inst. in remarks column Test sheet : TAM 12,7 A : 12.09.86 Edition Superceeded : 4.86 SD ang. spacing CS: 0-45-90-135-180-225-Calibrating oil : ISO-4113 270-315 Tolerance + - 0 : 0.50 (0.75)Combination no. : 0 400 648 143 SD mark cyl. no. : 1 Injection pump Pump designation : PE8A95D410LS2451 BASIC SETTING EP type number : 0 410 698 992 Governor 1/mi: 1150 1st speed . RQV300...1150AB1045-Governor design. Contr.-rod trav.mm: 9.30...9.40 1L Governer no. : 0 420 212 189 Del.quantity cm3/: 8.6...8.8 Customer-spec. information 100H.: (8.4...9.0) Customer : TAM Engine : F8L413F Dispersion cm3/:0.31st version kW : 173.0 100H.: (0.6) Speed 1/min: 2300 1/min: 300.0 2nd speed TEST BENCH REQUIREMENTS Contr.-rod trav. m: 6.4...6.6 Del.quantity cm3/: 1.4...2.4 100H.: (1.1...2.6) Dispersion cm3/: 0.3 100H.: (0.5) Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 000 (B) Setting of injection pump with externally-mounted governor Inlet press., bar : 1.00 SLEEVE TRAVELS 1st speed 1/min: 200 Sleeve travel mm: 0.70...0.90 Calibrating nozzle-holder : 0 681 343 009 assembly d speed 1/min: 600 Sleeve travel mm: 3.90...4.10 2nd speed Opening 1/min: 850 pressure, bar : 172...175 3rd speed Sleeve travel mm: 6.90...7.10 1/min: 1200 4th speed Test inj. tubing : 1 680 750 014 Sleeve travel mm: 8.30...8.50 Outside diameter SLEEVE POSITION x Wall thickness Control-lever position : 6.00x2.00x600 Degree: -1 1/min: 1200 x Length mm (A) Injection pump setting values Cont.-rod travelmm: 15.20...17.80 Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values \_\_\_\_ 1st version Speed 1/min: 1150
Del.quantity cm3/: 86.0...88.0
1000H.: (84.0...90.0)
Dispersion cm3/: 3.00 START OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 2.00...2.10 : (1.95...2.15) 1000H.: (6.00) A24

HIGHEST RATED SPEED 1st version Control-lever position degrees: 42...50 Testing: 1st c-rod trav.mm : 8.30 1/min : 1190...1200 Speed 2nd c-rod trav.mm: 4.00 Speed 1/min: 1225...1255 4th speed 1/min: 1350 C-rod trav.mm: 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 12...20 Testing: Speed 1/min: 100 C-rod trav.mm min: 8.00 Speed 1/min: 300 C-rod trav.mm : 6.40...6.60 CONSTANT REGULATION 1/min: 330...445 Speed TORQUE CONTROL Dimension a mm : 0.40 Torque-control curve - 1st version 1st speed 1/min : 1150 C-rod trav.mm : 9.30...9.40 2nd speed 1/min: 500 C-rod trav.mm: 9.70...9.80 3rd speed 1/min: 765 C-rod trav.mm : 9.50...9.70 4th speed 1/min: 820 C-rod trav.mm : 9.40...9.60 SWITCH-OVER POINT 1/min: 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 1000 Del.quantity cm3/: 86.5...89.5 1000H.: (84.5...91.5) 1/min : 700 Speed Del.quantity cm3/: 86.5...89.5 1000H.: (84.5...91.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1- 8- 7- 2- 6- 5-
                                                     Cam sequence
                                                                            4-
Note inst. in remarks column
Test sheet
                    : KHD 12,7 P3
                                                     SD ang. spacing CS: 0-45-90-135-180-225-
Edition
                    : 12.09.86
                                                                           270-315
Superceeded
                                                      Tolerance + - 0
                                                                         : 0.50 (0.75)
Calibration oil
                   : ISO-4113
Combination no.
                    : 0 400 648 144
                                                     SD mark cyl. no.
Injection pump
                                                     BASIC SETTING
                    : PE8A95D410LS2608
Pump designation
EP type number
                    : 0 410 698 988
                                                                     1/mi: 1250
                                                      1st speed
Governor
Governor design. : RQ300/1250AB929-1L
                                                     Contr.-rod trav.mm: 8.70...8.80
Governer no.
                   : 0 420 200 103
                                                     Del.quantity cm3/ : 7.6...7.8
Customer-spec. information
                                                                    100H.: (7.4...8.0)
Customer
                    : KHD
                                                                    cm3/:0.3
                    : F8L413F
                                                     Dispersion
Engine
                  : 154.0
1st version
              kW
                                                                    100H.: (0.6)
Speed
              1/min: 2500
                                                     2nd speed
                                                                    1/min: 300.0
                                                     Contr.-rod trav. m: 6.4...6.6
Del.quantity cm3/: 0.9...1.5
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.6...1.7)
cm3/: 0.5_
Calibrating-oil inlet temp. °C
                    : 38...42
                                                     Dispersion
                                                                    100H.: (0.7)
Overflow valve
                    : 1 417 413 000
                                                     SLEEVE POSITION
                                                     Control-lever position
Inlet press., bar : 1.00
                                                                  Degree: -1
                                                                   17min: 650
                                                     Speed
Calibrating nozzle-holder
                                                     Cont.-rod travelmm: 15.60...16.40
                   : 0 681 343 009
 assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                   : 172...175
                                                     1st version
                                                     Speed 1/min: 1250
Del.quantity cm3/: 76.0...78.0
1000H: (74.0...80.0)
Dispersion cm3/: 3.50
Test ini. tubing
                   : 1 680 750 014
                                                                  1009H.: (6.00)
Outside diameter
x Wall thickness
x Length mm
                   : 6.00x2.00x600
                                                     HIGHEST RATED SPEED
(A) Injection pump setting values
                                                     Setting point:
    Insp. values in parentheses
                                                     Speed
                                                                 1/min : 650
    Set constant delivery quant.
                                                     Contr.-rod trav.mm: 16.0
    per values ____
                                                     Testing:
START OF DELIVERY
                                                     1st c-rod trav.mm : 7.70
                                                     Speed 1/min: 1295...1310
2nd c-rod trav.mm: 4.00
Test pressure, bar: 25...27
                                                                  1/min: 1335...1365
                   : 2.00...2.10
Prestroke mm
                                                       Speed
                   : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
                                                     LOWEST RATED SPEED I
A26
```

Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 6.5 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.00 1/min : 300 Speed C-rod trav.mm : 6.40...6.60 : 2.00 C-rod trav.mm 1/min : 410...450 Speed TORQUE CONTROL Dimension a mm : 0.40 Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 8.70...8.80 2nd speed 1/min: 650 C-rod trav.mm : 9.50...9.60 3rd speed 1/min : 985 C-rod trav.mm : 9.30...9.40 4th speed 1/min: 1125 C-rod trav.mm: 8.80...9.10 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 850 Del.quantity cm3/: 76.5...79.5 1000H.: (74.0...82.0)

```
: 1-10- 9- 4- 3- 6-
5- 8- 7- 2
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                    : KHD 15,8 K2
                    : 20.10.86
Edition
                                                      SD ang. spacing CS: 0-27-72-99-144-171-2
Superceeded
                                                                            16-243-288-315
                                                      Tolerance + - 0
Calibrating oil : ISO-4113
                                                                          : 0.50 (0.75)
Combination no. : 0 400 649 173
                                                      SD mark cyl. no. : 1
Injection pump
                                                      BASIC SETTING
Pump designation : PE10A85D610/4L82243
EP type number
                  : 0 410 689 993
                                                                      1/mi: 1325
                                                      1st speed
Governor
Governor design. : RQV300...1325AB938DL
                                                      Contr.-rod trav.mm: 10.70...10.80
Governer no.
                    : 0 420 214 209
                                                      Del.quantity cm3/ : 7.8...7.9
Customer-spec. information
Customer
                    : KHD
                                                                     100H.: (7.6...8.1)
Engine
                    : F10L413
                                                                    cm3/:0.3
                                                      Dispersion
1st version kW
                  : 213.3
                                                                     100H.: (0.4)
Speed
              1/min: 2650
                                                      2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.9...7.1
Del.quantity cm3/: 1.0...1.6
100H.: (0.8...1.8)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                                    cm3/: 0.2
100H.: (0.4)
                    : 38...42
                                                      Dispersion
Overflow valve
                    : 1 417 413 000
                                                      SLEEVE POSITION
                                                      Control-lever position
Inlet press., bar: 1.00
                                                                   Degree: -1
                                                                    17min: 1340
                                                      Speed
Calibrating nozzle-holder
                                                      Cont.-rod travelmm: 15.20...17.80
 assembly
                : 0 681 343 009
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                      1st version
                                                      Speed 1/min: 1325
Del.quantity cm3/: 78.0...79.0
1000H: (76.0...81.0)
Dispersion cm3/: 3.00
Test inj. tubing : 1 680 750 014
                                                                   1000H.: (4.50)
Outside diameter
x Wall thickness
                 : 6.00X2.00X600
                                                      HIGHEST RATED SPEED
x Length mm
                                                      1st version
(A) Injection pump setting values
                                                      Control-lever
    Insp. values in parentheses
Set constant delivery quant.
                                                       position degrees: 62...70
    per values ____
                                                      Setting point:
                                                      Speed
                                                                  1/min : 1340
START OF DELIVERY
                                                      Contr.-rod trav.mm: 16.5
Test pressure, bar: 25...27
                                                      Testing:
Prestroke mm
                    : 1.50...1.60
                                                      1st c-rod trav.mm : 9.70
                    : (1.45...1.65)
                                                        Speed 1/min: 1365...1375
Contr.-rod trav.mm: 9.00...12.00
                                                      2nd c-rod trav.mm: 4.00
```

1/min : 1425...1455 4th speed 1/min: 1500 : 0.00...1.00 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 10...18 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.50 Speed 1/min : 300 6.90...7.10 on : 2.00 1/min : 755...785 C-rod trav.mm C-rod trav.mm Speed TORQUE CONTROL Dimension a mm : 0.70 Torque-control curve - 1st version 1st speed 1/min: 1325 C-rod trav.mm: 10.70...10.80 2nd speed 1/min: 600 C-rod trav.mm: 11.40...11.50 SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 800
Del.quantity cm3/: 76.0...79.0
1000H: (73.5...81.5)
Speed 1/min: 1000 Del.quantity cm3/: 76.5...79.5 1000H.: (74.0...82.0)

```
: 1-10- 9- 4- 3- 6-
5- 8- 7- 2
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence
Note inst. in remarks column
Test sheet
Edition
Superceeded
                  : KHD 15,8 B
                   : 12.09.86
                                                     SD ang. spacing CS: 0-27-72-99-144-171-
                   : 10.85
                                                                           216-243-288-315
                                                     Tolerance + - 0
Calibrating oil : ISO-4113
                                                                         : 0.50 (0.75)
Combination no.
                   : 0 400 649 223
                                                     SD mark cyl. no. : 1
Injection pump
                                                     BASIC SETTING
Pump designation : PE10A95D610/4L82452
EP type number : 0 410 699 998
                                                     1st speed
                                                                    1/mi: 1250
Governor
Governor design. : RQV300...1250AB1129L
                                                     Contr.-rod trav.mm: 10.30...10.40
Governer no.
                  : 0 420 212 143
                                                     Del.quantity cm3/: 9.1...9.3
Customer-spec. information
Customer
                                                                   100H.: (8.9...9.5)
                   : KHD
Engine
                   : F10L413F
                                                     Dispersion
                                                                   cm3/:0.3
1st version kW : 228.0
                                                                   100H.: (0.6)
             1/min: 2500
Speed
                                                     2nd speed
                                                                   1/min: 300.0
                                                     TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                   : 38...42
Overflow valve
                    : 1 417 413 000
                                                     (B) Setting of injection pump with
                                                         externally-mounted governor
Inlet press., bar: 1.00
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 300
Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 500
Sleeve travel mm: 2.80...3.00
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
Opening
                                                     3rd speed 1/min: 1000
 pressure, bar : 172...175
                                                       Sleeve travel mm: 6.50...6.70
                                                     4th speed 1/min: 1290
                                                     Sleeve travel mm: 8.60...8.80
5th speed 1/min: 1375
Sleeve travel mm: 9.40...9.60
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
x Length mm
              : 6.00x2.00x600
                                                     SLEEVE POSITION
                                                     Control-lever position
                                                                 Degree: -1
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                                  17min: 1275
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
    per values ____
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
STERT OF DELIVERY
Test pressure, bar: 25...27
                                                     1st version
                                                                   1/min: 1250
                                                     Speed
                                                     Del.quantity cm3/: 91.0...93.0
Prestroke mm
                   : 2.00...2.10
                   : (1.95...2.15)
                                                                  1000H.: (89.0...95.0)
Contr.-rod trav.mm: 9.00...12.00
```

B<sub>0</sub>2

Dispersion cm3/ : 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 47...55 Testing: 1st c-rod trav.mm : 9.30 Speed 1/min: 1290...1300
2nd c-rod trav.mm: 4.50
Speed 1/min: 1360...1390
4th speed 1/min: 1500
C-rod trav.mm: 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 14...22 Testing: Speed 1/min: 100 C-rod trav.mm min: 8.50 Speed 1/min: 300 C-rod trav.mm : 6,9...7,1 CONSTANT REGULATION 1/min : 375...485 Speed TORQUE CONTROL Dimension a mm : 0.50 Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 10.30...10.40 2nd speed 1/min: 500 C-rod trav.mm : 10.80...10.90 3rd speed 1/min: 885 C-rod trav.mm : 10.60...10.80 4th speed 1/min : 1000 C-rod trav.mm : 10.40...10.60 SWITCH-OVER POINT 1/min: 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 650 Del.quantity cm3/: 92.5...95.5 1000H.: (90.0...98.0) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : HAN 10.8 F3 : 12.09.36 Edition SD mark cyl. no. : 1 Superceeded Calibrating oil : ISO-4113 BASIC SETTING : 0 400 674 042 Combination no. 1st speed 1/mi: 1100 Injection pump Contr.-rod trav.mm: 10.00...10.10 Pump designation : PE4A95D42ORS2556 EP type number : 0 410 694 996 Del.quantity cm3/: 9.3...9.5 Governor : RSV350...1100A8C1120 100H.: (9.1...9.7) Governor design. cm3/:0.3Governer no. : 0 420 233 175 Dispersion Customer-spec. information 100H.: (0.6) Customer : HANOMAG 2nd speed 1/min: 400.0 Contr.-rod trav. m: 7.9...8.1 Del.quantity cm3/: 4.0...5.0 Engine : D943 100H.: (3.7...5.2) cm3/: 0.3 100H.: (0.5) TEST BENCH REQUIREMENTS Dispersion Calibrating-oil inlet temp. C : 38...42 SLEEVE POSITION Control-lever position Overflow valve Degree: -3 17min: 800 : 1 417 413 000 Inlet press., bar : 1.00 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Calibrating nozzle-holder : 0 681 343 009 assembly Notch setting x : 4.50 Opening FULL-LOAD DELIV. AT FULL-LOAD STOP pressure, bar : 172...175 1st version 1/min: 1100 Speed Del.quantity cm3/: 93.0...95.0 Test inj. tubing : 1 680 750 003 1000H.: (91.0...97.0) cm3/: 3.50 1000H.: (6.00) Outside diameter Dispersion x Wall thickness x Length mm : 6.00x2.00x600 HIGHEST RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Control-lever position degrees: 48...56 per values Testing: START OF DELIVERY 1st c-rod trav.mm : 9.00 Test pressure, bar: 25...27 1/min: 1140...1150 Speed 2nd c-rod trav.mm: 4.00 1/min: 1165...1195 Prestroke mm : 2.15...2.25 Speed 3rd c-rod trav.mm : 4.00 : (2.10...2.30) Contr.-rod trav.mm: 9.00...12.00 1/min: 1205...1235 Speed 1/min : 1365 Cam sequence : 1- 2- 4- 3 4th speed C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I Control-lever position degrees: 19...27 Setting point w/out aux. spring Speed 1/min : 400 Contr.-rod trav.mm: 7.5 Testing: Speed 1/min : 100 C-rod trav.mm min: 19.50 Speed 1/min: 400 C-rod trav.mm: 7.90...8.10 : 2.00 C-rod trav.mm Speed 1/min: 580...640 Speed 1/min: 600 Speed TORQUE CONTROL Dimension a mm : 0.90 Torque-control curve - 1st version 1st speed 1/min: 1100 C-rod trav.mm : 10.00...10.10 2nd speed 1/min : 1005 C-rod trav.mm : 10.40...10.60 3rd speed 1/min : 500 C-rod trav.mm : 10.90...11.00 FUEL-DELIVERY CHARACTERISTICS 1/min : 700 Del.quantity cm3/: 100.0...103.0 1000H.: (98.0...105.0) 1/min : 500 Speed Del.quantity cm3/: 92.0...94.0 1000H.: (90.0...96.0)

Cold-start testing of RSV governor

according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : HAN 7,2 B Edition : 12.09.86 SD mark cyl. no. : 1 Superceeded : 1.83 : ISO-4113 Calibrating oil BASIC SETTING Combination no. : 0 400 674 044 1st speed 1/mi: 1100 Injection pump Contr.-rod trav.mm: 11.30...11.40 Pump designation : PE4A95D42ORS2662 EP type number : 0 410 694 995 Del.quantity cm3/: 10.9...11.1 Governor 100H.: (10.7...11.3) Sovernor design. : RSV350...1100A8C1120 Governer no. : 0 420 233 175 Dispersion cm3/:0.3Customer-spec. information 100H.: (0.6) Customer : HANOMAG 2nd speed 1/min: 350.0 : D943 A1 Engine Contr.-rod trav. m: 6.4...6.6 Del.quantity cm3/: 1.1...1.7 100H:: (0.8...1.9) Dispersion cm3/: 0.3 100H:: (0.5) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 SLEEVE POSITION Overflow valve Control-lever position : 1 417 411 000 Degree: -3 17min: 800 Speed Inlet press., bar: 1.00 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload\_ Calibrating nozzle-holder : 0 681 343 009 assembly Notch setting x : 3.75 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening. pressure, bar : 172...175 1st version %/min: 1100 Speed Del.quantity cm3/: 109.5...111.5 1000H.: (107.5...113.5) Dispersion cm3/: 3.00 1000H.: (6.00) Test inj. tubing : 1 680 750 003 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 HIGHEST RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Control-lever position degrees: 45...53 per values Testing: START OF DELIVERY 1st c-rod trav.mm : 10.30 1/min: 1140...1150 Test pressure, bar: 25...27 Speed 2nd c-rod trav.mm : 4.00 1/min: 1175...1205 : 2.15...2.25 Speed Prestroke mm : (2.10...2.30) 3rd c-rod trav.mm: 4.00 Contr.-rod trav.mm: 9.00...12.00 1/min: 1195...1225 Speed th speed 1/min: 1360 C-rod trav.mm: 0.30...1.40 4th speed Cam sequence : 1- 2- 4- 3

LOWEST RATED SPEED I Control-lever position degrees: 15...23 Setting point w/out aux. spring Speed 1/min : 350 Contr.-rod trav.mm: 6.0 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 Speed 1/min: 350 C-rod trav.mm : 6.40...6.60 C-rod trav.mm : 2.00 Speed 1/min : 490...550 TORQUE CONTROL : 0.50 Dimension a mm Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod transmm : 11.30...11.40 2nd speed //min: 500 C-rod trav.mm : 11.80...11.90 3rd speed 1/min: 980 C-rod trav.mm : 11.40...11.60 FUEL-DELIVERY CHARACTERISTICS 

Remarks: Cold-start testing of RSV governor according to VDT-I-420/114.

**APPLICATION** 

Wheel loader

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 6,2 I 1 SD mark cyl. no. : 1 : 12.09.86 Edition Superceeded : 4.86 START OF DELIVERY DIFFERENCE : ISO-4113 Calibrating oil betw.c-rod trav.mm: 8.50...9.50 Difference ocs : 2.50...3.50 Combination no. : 0 400 676 141 Injection pump BASIC SETTING Pump designation : PE6A90D32ORS2547 EP type number : 0 410 696 180 1st speed 1/mi: 1000 Governor Governor design. : RSV250...1200A5B779R Contr.-rod trav.mm: 10.80...10.90 Governer no. : 0 420 233 121 Del.quantity cm3/ : 7.1...7.2 Customer-spec. information 100H.: (6.9...7.4) Customer : DAF cm3/:0.3: DT615 Engine Dispersion TEST BENCH REQUIREMENTS 100H.: (0.4) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 5.9...6.1 Del.quantity cm3/: 0.9...1.3 100H.: (0.7...1.5) Calibrating-oil inlet temp. OC : 38...42 Overflow valve cm3/: 0.2 100H.: (0.4) : 1 417 413 000 Dispersion Inlet press., bar: 1.50 SLEEVE POSITION Calibrating nozzle-holder Control-lever position : 0 681 343 009 assembly Degree: -3 1/min: 800 Speed Cont.-rod travelmm: 0.30...1.00 Opening pressure, bar : 172...175 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 015 1st version Speed 1/min: 1000 Charge press. hPa: 700 Del.quantity cm3/: 71.0...72.0 1000H.: (69.0...74.0) Dispersion cm3/: 3.00 Outside diameter x Wall thickness : 6.00X1.50X600 x Length mm (A) Injection pump setting values 1000H.: (4.50) Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED per values \_\_\_\_ 1st version Control-lever START OF DELIVERY position degrees: 47...55 Test pressure, bar: 25...27 Testing: : 2.20...2.30 1st c-rod trav.mm : 9.80 Prestroke mm : (2.15...2.35) / 1/min : 1240...1250 Speed Contr.-rod trav.mm: 7.50...10.50 2nd c-rod trav.mm: 4.00 Cam sequence : 1-5-3-6-2-4 1/min: 1275...1305 Speed 3rd c-rod trav.mm : 4.00 Speed 1/min : 1285...1305 **B08** 

4th speed 1/min: 1450 C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 13...21 Setting point w/out aux. spring 1/min : 250 Contr.-rod trav.mm: 5.5 1/min : 250 Speed C-rod trav.mm : 5.90...6.10 : 2.00 C-rod trav.mm 1/min: 330...3950 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1000 C-rod trav.mm : 11.10...11.20 2nd speed 1/min: 400 C-rod trav.mm : 11.30...11.40 5th speed 1/min: 300 C-rod trav.mm : 11.50...12.00 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 600 Speed hPa : 700 Pressure Contr.-rod trav.mm: 10.80...10.90 Measurement Speed 1/min : 600 1st pressure hPa : -C-rod trav.mm : 9.80...10.00 2nd pressure hPa : 250 C-rod trav.mm : 10.60...10.70 3rd pressure hPa : 210 C-rod trav.mm : 10.10...10.40 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/ : 51.5...53.5 1000H.: (49.5...55.5) Remarks: Cold-start testing of RSV governor according to VDT-Y-420/114.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Note inst. in remarks column
Test_sheet
                   : DAF 8,3 K 1
Edition
                    : 12.09.86
                                                      SD mark cyl. no. : 1
Superceeded
                   : 10.85
                  : ISO-4113
Calibrating oil
                                                      START OF DELIVERY DIFFERENCE
                                                      betw.c-rod trav.mm: 8.50...9.50
Combination no.
                   : 0 400 676 152
                                                      & c-rod tray max. : 21.0
Difference CS : 3.00...4.00
Injection pump
Pump designation
                   : PE6A95D410RS2525
EP type number
                    : 0 410 696 987
                                                      BASIC SETTING
Governor
Governor design.
                    : RSV250...1200A5B2013
                                                      1st speed
                                                                     1/mi: 1000
                    : 0 420 234 380
Governer no.
                                                      Contr.-rod trav.mm: 12.60...12.70
Customer-spec. information
                                                      Del.quantity cm3/: 10.8...11.0
Customer
                                                                    100H.: (10.6...11.2)
Engine
                    : DHR/DHTD 825
                                                      Dispersion
                                                                    cm3/:0.3
TEST BENCH REQUIREMENTS
                                                                    100H.; (0.6)
Calibrating-oil inlet temp. OC
                    : 38 . . . 42
                                                                    1/min: 250.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.0...6.2
Overflow valve
                                                      Del.quantity cm3/: 0.7...1.1
                    : 1 417 413 000
                                                                    100H.: (0.45...1.35)
                                                                    cm3/: 0.35
100H.: (0.55)
                                                      Dispersion
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                      SLEEVE POSITION
                   : 0 681 343 009
 assembly
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Opening
                                                      Speed
 pressure, bar
                   : 172...175
                                                      Cont.-rod travelmm: 0.30...1.00
                                                      Governor-spring reload
Test inj. tubing
                   : 1 680 750 015
                                                      Notch setting x : 4.25
Outside diameter
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
x Wall thickness
               : 6.00x1.50x600
x Length mm
                                                      1st version
                                                      Speed
                                                                    1/min: 1000
(A) Injection pump setting values
                                                      Charge press. hPa : 700
                                                     Del.quantity cm3/: 108.5...110.5
1000H.: (106.5...112.5)
Dispersion cm3/: 3.50
1000H.: (6.00)
    Insp. values in parentheses
Set constant delivery quant.
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
                                                     HIGHEST RATED SPEED
                                                      1st version
                    : 2.00...2.10
Prestroke mm
                                                      Control-lever
                    : (1.95...2.15)
                                                      position degrees: 51...59
Contr.-rod trav.mm: 7.50...10.50
Cam sequence : 1-5-3-6-2-4
                                                      Testing:
                                                      1st c-rod trav.mm : 11.60
B10
```

1/mim : 1230...1240 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min : 1290...1320 3rd c-rod trav.mm : 4.00 1/min: 1325...1355 Speed 1/min: 1490 4th speed C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Setting point w/out aux. spring 1/min : 250 Contr.-rod trav.mm: 5.6 Testing: 1/min: 100 Speed C-rod trav.mm min: 19.50 Speed 1/min: 250 : 6.00...6.20 : 2.00 C-rod trav.mm C-rod trav.mm 1/min : 445...505 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1000 1st speed C-rod trav.mm : 12.90...13.00 2nd speed 1/min: 400 C-rod trav.mm : 13.10...13.20 3rd speed 1/min : 300 C-rod trav.mm : 13.30...13.80 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 1000 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.60...12.70 Measurement Speed 1/min : 1000 1st pressure hPa : 300 C-rod trav.mm : 12.30...12.40 2nd pressure hPa : 260 C-rod trav.mm : 11.70...11.90 3rd pressure hPa : -C-rod trav.mm : 11.50...11.60 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 85.5...86.5 1000H.: (83.5...88.5)

Remarks: Cold-start testing of RSV governor according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 8,3 I 3 SD mark cyl. no. : 1 Edition : 12.09.86 : 1.85 Superceeded START OF DELIVERY DIFFERENCE : ISO-4113 Calibrating oil betw.c-rod trav.mm: 8.50...9.50 Difference CS : 4.50...5.50 Combination no. : 0 400 676 165 Injection pump BASIC SETTING Pump designation : PE6A90D410RS2524 EP type number 1/mi: 750 : 0 410 696 179 1st speed Governor Governor design. : RSV250...750A7B2124L Governer no. : 0 420 232 257 Contr.-rod trav.mm: 9.70...9.80 Del.quantity cm3/: 8.2...8.4 Customer-spec. information Customer : DAF 100H.: (8.0...8.6) Engine : DH 825 Dispersion cm3/:0.4TEST BENCH REQUIREMENTS 100H.: (0.5) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 6.3...6.5 Del.quantity cm3/: 1.9...2.5 100H.: (1.7...2.7) Dispersion cm3/: 0.2 Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 000 100H.: (0.4) Inlet press., bar: 1.50 SLEEVE POSITION Calibrating nozzle-holder Control-lever position Degree: -3 1/min: 800 : 0 681 343 009 assembly Opening Cont.-rod travelmm: 0.30...1.00 pressure, bar : 172...175 Governor-spring reload Notch setting x : 4.50 Test inj. tubing : 1 680 750 015 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version : 6.00X1.50X600 x Length mm 1/min: 750 Speed Del.quantity cm3/: 82.5...84.5 1000H.: (80.5...86.5) cm3/ : 4.00 1000H.: (5.50) (A) Injection pump setting values Insp. values in parentheses Dispersion Set constant delivery quant. per values HIGHEST RATED SPEED START OF DELIVERY 1st version Test pressure, bar: 25...27 Control-lever position degrees: 41...49 : 2.30...2.40 Prestroke mm : (2.25...2.45) Testing: Contr.-rod trav.mm: 9.00...12.00 1st c-rod trav.mm : 8.70 Cam sequence : 1-5- 3- 6- 2- 4 Speed 1/min: 770...780 2nd c-rod trav.mm : 4.00 1/min : 785...805 Speed

**B12** 

3rd c-rod trav.mm : 0.30...1.70

Speed 1/min: 955

LOWEST RATED SPEED I

Control-lever

control-lever position degrees: 17...25
Setting point w/out aux. spring Speed 1/min: 250
Contr.-rod trav.mm: 6.4
Speed 1/min: 250
C-rod trav.mm: 6.30...6.50
C-rod trav.mm: 2.00
Speed 1/min: 260...320

SET IDLE AUXILIARY SPRING Contra-rod trav.mm: 2.00

Remarks: **APPLICATION** 

Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - <sup>8</sup> : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                     : DAF 8,3 N
Edition
                     : 12.09.86
                                                        SD mark cyl. no. : 1
Superceeded
                     : 9.84
Calibrating oil
                    : ISO-4113
                                                        START OF DELIVERY DIFFERENCE
                                                        betw.c-rod trav.mm: 8.50...9.50
Combination no.
                     : 0 400 676 166
                                                        & c-rod tray max. : 21.0
Difference CS : 3.00...4.00
Injection pump
Pump designation
                    : PE6A95D410RS2575
EP type number
                     : 0 410 696 984
                                                        BASIC SETTING
Governor
Governor design. : RSV250...750A7B2124L
                                                        1st speed
                                                                        1/mi: 750
Governer no.
                     : 0 420 232 257
                                                        Contr.-rod trav.mm: 12.50...12.60
Customer-spec. information
                                                        Del.quantity cm3/: 10.0...10.2
Customer
                     : DAF
                     : DU 825
Engine
                                                                       100H.: (9.8...10.4)
Speed
               1/min: 1500
                                                        Dispersion
                                                                       cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                       100H.: (0.7)
Calibrating-oil inlet temp. C
                     : 38...42
                                                                       1/min: 250.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 6.0...6.2
Overflow valve
                                                        Del.quantity cm3/: 0.7...1.3
                                                                       100H.: (0.4...1.5)
cm3/: 0.2
                     : 1 417 413 000
                                                        Dispersion
Inlet press., bar: 1.50
                                                                       100H.: (0.4)
Calibrating nozzle-holder
                                                        SLEEVE POSITION
                                                        Control-lever position
                   : 0 681 343 009
 assembly
                                                                     Degree: -3
                                                                      17min: 800
Opening
                                                        Speed
 pressure, bar
                    : 172 ... 175
                                                        Cont.-rod travelmm: 0.30...1.00
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
                    : 1 680 750 015
Test inj. tubing
                                                        1st version
Outside diameter
                                                                       1/min: 750
                                                        Speed
                                                       Del.quantity cm3/: 100.5...102.5
1000H.: (98.5...104.5)
Dispersion cm3/: 4.00
x Wall thickness
                    : 6.00x1.50x600
x Length mm
                                                                     1000H.: (7.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant
                                                        HIGHEST RATED SPEED
    per values ____
                                                        1st version
                                                        Control-lever
START OF DELIVERY
                                                         position degrees: 36...44
Test pressure, bar: 25...27
                                                        Testing:
                                                       1st c-rod trav.mm : 11.50

Speed 1/min : 770...780

2nd c-rod trav.mm : 4.00

Speed 1/min : 785...805
Prestroke mm
                     : 2.00...2.10
                    : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
                    : 1-5-3-6-2-4
Cam sequence
                                                                     1/min: 955
                                                        4th speed
B14
```

C-rod trav.mm : 0.30...1.70

LOWEST RATED SPEED I

Control-lever

position degrees: 11...19
Setting point w/out aux. spring
Speed 1/min: 250

Contr.-rod trav.mm: 6.1 Speed 1/min: 250

C-rod trav.mm : 6.00...6.20 C-rod trav.mm : 2.00 Speed 1/min : 260...320

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version 1st speed 1/min: 750

C-rod trav.mm : 12.50...12.60 2nd speed 1/min : 700

C-rod trav.mm : 12.50...12.80

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column : DAF 6.2 I 2 : 12.09.86 : 10.85 Test sheet Edition Superceeded SD mark cyl. no. : 1 Calibrating oil : ISO-4113 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 Difference CS: 2.50...3.50 Combination no. : 0 400 676 169 Injection pump Pump designation : PE6A90D320RS2547 BASIC SETTING EP type number : 0 410 696 180 Governor 1/mi: 1000 1st speed Governor design. : RSV250...1200A5B2133 Contr.-rod trav.mm: 10.80...10.90 Governer no. : 0 420 233 138 Del.quantity cm3/ : 7.1...7.2 Customer-spec. information 100H.: (6.9...7.4) Customer : DAF Engine : DT615 Dispersion cm3/:0.3TEST BENCH REQUIREMENTS 100H.: (0.4) Calibrating-oil inlet temp. °C 1/min: 250.0 2nd speed Contr.-rod trav. m: 5.9...6.1
Del.quantity cm3/: 0.9...1.3
100H:: (0.7...1.5)
Dispersion cm3/: 0.2
100H:: (0.4) : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar: 1.50 SLEEVE POSITION Calibrating nozzle-holder Control-lever position : 0 681 343 009 assembly Degree: -3 17min: 800 Opening Cont.-rod travelmm: 0.30...1.00 pressure, bar : 172...175 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 015 1st version 1/min: 1000 Speed Charge press. hPa: 700
Del.quantity cm3/: 71.5...72.5
1000H: (69.5...74.5)
Dispersion cm3/: 3.00 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 1000H.: (4.50) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED per values 1st version Control-lever START OF DELIVERY position degrees: 50...58 Test pressure, bar: 25...27 Testing: Prestroke mm : 2.20...2.30 1st c-rod trav.mm: 9.80 Speed 1/min: 1240...1250 : (2.15...2.35) Contr.-rod trav.mm: 7.50...10.50 2nd c-rod trav.mm: 4.00 Cam sequence : 1-5-3-6-2-4 1/min: 1270...1300 Speed 3rd c-rod trav.mm: 4.00 **B16** 

```
1/min : 1310...1340
1/min : 1490
  Speed
4th speed
  C-rod trav.mm : 0.30...1.70
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
           1/min : 250
Speed
Contr.-rod trav.mm: 5.5
Testing:
Speed
            1/min : 100
Speed
            1/min : 250
C-rod trav.mm : 5.90...6.10
C-rod trav.mm
                 : 2.00
           1/min : 585...645
Speed
TORQUE CONTROL
Torque-control curve - 1st version
          1/min : 1000
1st speed
  C-rod trav.mm : 10.80...10.90
2nd speed 1/min: 400
  C-rod tray.mm : 11.00...11.10
3rd speed 1/min: 300
  C-rod trav.mm : 11,20...11.70
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min: 1000
Speed
           hPa : 700
Pressure
Contr.-rod trav.mm: 10.80...10.90
Measurement
           1/min : 1000
Speed
1st pressure hPa : -
                  : 9.80...10.00
  C-rod trav.mm
2nd pressure hPa : 250
 C-rod trav.mm : 10.60...10.70
3rd pressure hPa : 210
  C-rod trav.mm : 10.10...10.40
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
           1/min : 600
Speed
Del.quantity cm3/: 51.5...53.5
            1000H.: (49.5...55.5)
Remarks:
Cold-start testing of RSV governor
according to VDT-I-420/114.
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : DAF 8.3 I 5 : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 0 400 676 174 Injection pump Pump designation : PE6A9OD41ORS2524 EP type number : 0 410 696 179 Governor Governor design. : RSV250...1200A5C2198 : 0 420 232 441 Governer no. Customer-spec. information Customer Engine : DH825 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. <sup>D</sup>C : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 2.30...2.40 : (2.25...2.35)
Contr.-rod trav.mm: 7.50...10.50
Cam sequence : 1- 5- 3- 6- 2-

SD ang. spacing  $^{0}$ CS: 0-60-120-180-240-300 Tolerance + -  $^{0}$ : 0.50 (0.75) SD mark cyl. no. : 1 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 Difference CS: 4.50...5.50 BASIC SETTING 1/mi: 1000 1st speed Contr.-rod trav.mm: 9.40...9.50 Del.quantity cm3/ : 7.1...7.2 100H.: (6.9...7.4) Dispersion cm3/:0.3100H.: (0.4) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/: 0.9...1.5

100H.: (0.7...1.7)

Dispersion cm3/: 0.2

100H.: (0.4) SLEEVE POSITION Control-lever position Degree: -3 17min: 800 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Notch setting x : 3.25 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1000
Del.quantity cm3/: 71.0...72.0
1000H.: (69.0...74.0)
Dispersion cm3/: 3.00 1000H.: (4.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 46...54 Testing: 1st c-rod trav.mm : 8.40 Speed 1/min : 1240...1250

1/min : 1260...1290 Speed 3rd c-rod trav.mm : 4.00 Speed 1/min: 1260...1290 th speed 1/min: 1475 4th speed C-rod trav.mm : 0.30...1.40 5th speed 1/min: 1310...1340 C-rod trav.mm : 4,00

LOWEST RATED SPEED 1

Control-lever position degrees: 13...21
Setting point w/out aux. spring
Speed 1/min: 250 Contr.-rod trav.mm: 5.5
Speed 1/min: 250
C-rod trav.mm: 5.90...6.10
C-rod trav.mm: 2.00

1/min: 570...630 Speed

TORQUE CONTROL

Dimension a mm : 0.30 Torque-control curve - 1st version

1st speed 1/min : 1000

C-rod trav.mm : 9.40...9.50

2nd speed 1/min: 400

C-rod trav.mm : 9.40...9.60 3rd speed 1/min : 300

C-rod trav.mm : 9.70...10.20

Remarks:

2nd c-rod trav.mm: 4.00

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                    SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Test sheet
                   : DAF 8,3 N 5
Edition
                   : 12.09.86
Superceeded
                  : 10.85
                                                    SD mark cyl. no. : 1
Calibrating oil
                   : ISO-4113
                                                    START OF DELIVERY DIFFERENCE
Combination no.
                   : 0 400 676 175
                                                    betw.c-rod trav.mm: 8.50...9.50
Difference ° CS : 3.00...4.00
Injection pump
Pump designation
                   : PE6A95D410RS2575
EP type number
                   : 0 410 696 984
                                                    BASIC SETTING
Governor
Governor design.
                   : RSV250...1200A5C2198
                                                    1st speed
                                                                   1/mi: 1200
                     -1L
Governer no.
                   : 0 420 232 442
                                                    Contr.-red trav.mm: 10.40...10.50
Customer-spec. information
                                                    Del.quantity cm3/ : 7.3...7.5
Customer
                   : DAF
                                                                  100H.: (7.1...7.7)
                   : DH 825
Engine
Speed
              1/min: 2400
                                                    Dispersion
                                                                  cm3/:0.3
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.6)
Calibrating-oil inlet temp. °C
                                                                  1/min: 250.0
                                                    2nd speed
                   : 38...42
                                                    Contr.-rod trav. m: 6.1...6.3
                                                    Del.quantity cm3/: 0.7...1.1
                                                                  100H.: (0.4...1.3)
Overflow valve
                                                                  cm3/: 0.3
                   : 1 417 413 000
                                                    Dispersion
                                                                  100H.: (0.5)
Inlet press., bar : 1.50
                                                    SLEEVE POSITION
                                                    Control-lever position
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                                 Degree: -3
                                                                  17min: 800
                                                    Speed
Opening.
                                                    Cont.-rod travelmm: 0.30...0.70
pressure, bar
                  : 172...175
                                                    Governor-spring reload
                                                    Notch setting x : 5.00
Test in i. tubing : 1 680 750 015
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                                                    1st version
                                                    Speed 1/min: 1200
Del.quantity cm3/: 73.0...75.0
                   : 6.00x1.50x600
x Length mm
                                                                 10COH.: (71.0...77.0)
(A) Injection pump setting values
    Insp. values in parentheses
                                                                cm3/ : 3.50
                                                    Dispersion
    Set constant delivery quant.
                                                                 1000H.: (6.00)
    per values ____
                                                    HIGHEST RATED SPEED
START OF DELIVERY
                                                    1st version
Test pressure, bar: 25...27
                                                    Control-lever
                                                     position degrees: 49...57
                   : 2.00...2.10
Prestroke mm
                   : (1.95...2.15)
                                                    Testing:
Contr.-rod trav.mm: 7.50...10.50
                                                    1st c-rod trav.mm: 9.40
Cam sequence : 1-5- 3- 6- 2- 4
                                                      Speed 1/min: 1240...1250
```

**B21** 

2nd c-rod trav.mm : 4.00 1/min: 1300...1330 Speed 3rd c-rod trav.mm : 4.00 1/min : 1340...1370 Speed 4th speed 1/min: 1505 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Setting point w/out aux. spring Speed ` 1/min : 250 Contr.-rod trav.mm: 5.7 1/min : 250 Speed : 6.10...6.30 : 2.00 C-rod trav.mm C-rod trav.mm 1/min : 655...715 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1200 1st speed C-rod trav.mm : 10.40...10.50 2nd speed 1/min : 500 C-rod trav.mm : 11.20...11.30 3rd speed 1/min: 800 C-rod trav.mm : 11.10...11.20 4th speed 1/min: 940 C-rod trav.mm : 10.70...11.00 FUEL-DELIVERY CHARACTERISTICS 1/min : 800 Speed Del.quantity cm3/: 74.5...77.5 1000H.: (72.0...80.0) Remarks:

## BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 8.3 K 8 : 05.11.86 Edition SD mark cyl. no. : 1 Superceeded : 12.85 Calibrating oil : ISO-4113 START OF DELIVERY DIFFERENCE Combination no. : 0 400 676 176 betw.c-rod trav.mm: 8.50...9.50 & c-rod tray max. : 21.0 Difference CS : 3.00...4.00 Injection pump Pump designation : PE6A95D410RS2525 EP type number : 0 410 696 987 BASIC SETTING Governor Governor design. : RSV250...1200A5C2199 1st speed 1/mi: 1000 Governer no. : 0 420 232 443 Contr.-rod trav.mm: 12.60...12.70 Del.quantity cm3/: 10.9...11.0 Customer-spec. information Customer : DAF 100H.: (10.7...11.2) Engine : DHTD 825 Dispersion cm3/:0.3TEST BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. C : 38...42 1/min: 250.0 2nd speed Contr.-rod trav. m: 6.0...6.2 Del.quantity cm3/: 0.7...1.1 100H.: (0.4...1.3) Dispersion cm3/: 0.3 Overflow valve : 1 417 413 000 100H.: (0.5) Inlet press., bar : 1.50 Calibrating nozzle-holder SLEEVE POSITION : 0 681 343 009 Control-lever position assembly Degree: -3 17min: 800 Opening Speed pressure, bar : 172...175 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Test inj. tubing : 1 680 750 015 Notch setting x : 4.25 Outside diameter FULL-LOAD DELIV. AT FULL-LOAD STOP x Wall thickness x Length mm : 6,00x1.50x600 1st version Speed 1/min: 1000 Charge press. hPa: 700 Del.quantity cm3/: 109.0...110.0 1000H.: (107.0...112.0) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Dispersion cm3/: 3.50 per values \_\_\_\_ 1000H.: (6.00) START OF DELIVERY Test pressure, bar: 25...27 HIGHEST RATED SPEED 1st version : 2.00...2.10 : (1.95...2.15) Prestroke mm Control-lever position degrees: 51...59 Contr.-rod trav.mm: 7.50...10.50 : 1-5-3-6-2-4 Cam sequence Testing: 1st c-rod trav.mm : 11.60

```
1/min : 1230...1240
  Speed
2nd c-rod trav.mm : 4.00
Speed 1/min: 1290...1320
3rd c-rod trav.mm: 4.00
           1/min : 1310...1340
  Speed
           1/min : 1490
4th speed
                 : 0.30...1.40
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min: 250 Contr.-rod trav.mm: 5.6
Speed
            1/min : 250
C-rod trav.mm
                : 6.00...6.20
                  : 2.00
C-rod trav.mm
            1/min : 445...505
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1000
1st speed
  C-rod trav.mm : 13.40...13.50
          1/min : 400
2nd speed
  C-rod trav.mm : 13.60...13.70
           1/min : 300
3rd speed
  C-rod trav.mm : 13.80...14.30
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 600
Speed
Pressure
            hPa : 700
Contr.-rod trav.mm: 12.60...12.70
Measurement
Speed
            1/min : 600
  C-rod trav.mm : 11.50...11.60
2nd pressure hPa : 300
 C-rod trav.mm : 12.30...12.40
3rd pressure hPa : 260
  C-rod trav.mm
                  : 11.70...11.90
FUEL-DELIVERY CHARACTERISTICS
            1/min : 600
Speed
Del.quantity cm3/: 85.5...86.5
            1000H.: (83.5...88.5)
Remarks:
Cold-start testing of RSV governor
according to VDT-I-420/114.
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column : DAF 6,2 K 3 Test sheet : 28.10.86 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 0 400 676 177 Injection pump : PE6A85D32ORS2546 Pump designation EP type number : 0 410 686 943 Governor : RSV250...1300A1C2200 Governor design. : 0 420 233 201 Governer no. Customer-spec. information Customer : DF615 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 : 2.15...2.25 Prestroke mm : (2.10...2.30) Contr.-rod trav.mm: 7.50...10.50 Cam sequence : 1- 5- 3- 6-2-

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) SD mark cyi. no. : 1 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 & c-rod tray max. : 21.0 Difference CS : 3.00...4.00 BASIC SETTING 1st speed 1/mi: 1000 Contr.-rod trav.mm: 10.40...10.50 Del.quantity cm3/ : 5.6...5.7 100H.: (5.4...5.9) Dispersion cm3/:0.3100H.: (0.4) 1/min: 250.0 2nd speed Contr.-rod trav. m: 8.3...8.5 Del.quantity cm3/: 1.4...1.9 100H.: (1.2...2.1) cm3/:0.2Dispersion 100H.: (0.4) SLEEVE POSITION Control-lever position Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1000
Del.quantity cm3/: 56.0...57.0
1000H: (54.0...59.0)
Dispersion cm3/: 3.00 1000H.: (4.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 65...73 Testing: 1st c-rod trav.mm : 9.40 Speed 1/min: 1340...1350 2nd c-rod trav.mm : 4.00 Speed 1/min: 1355...1385 3rd c-rod trav.mm: 4.00

Speed 1/min: 1370...1400 4th speed 1/min: 1540 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I Control-lever

position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 5.5
Speed 1/min: 250
C-rod trav.mm: 5.40...5.60
C-rod trav.mm: 2.00

1/min: 460...520 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1000 C-rod trav.mm: 10.40...10.50

2nd speed 1/min: 400

C-rod trav.mm : 10.40...10.60

3rd speed 1/min: 300

C-rod trav.mm : 10.70...11.20

Remarks: Cold-start testing of RSV governor according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 8,3 N 7 SD mark cyl. no. : 1 : 12.09.86 Edition Superceeded START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 8.50...9.50 Difference CS : 3.00...4.00 Combination no. : 0 400 676 178 Injection pump BASIC SETTING Pump designation : PE6A95D41ORS2575 EP type number : 0 410 696 984 1/mi: 750 1st speed Governor Governor design. : R\$V250...750A7C2201L Governer no. : 0 420 232 444 Contr.-rod trav.mm: 13.20...13.30 Del.guantity cm3/: 11.0...11.2 Customer-spec. information : DAF 100H.: (10.8...11.4) Customer Engine : DHTD 825 Dispersion cm3/:0.4TERS BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. °C 1/min: 250.0 2nd speed Contr.-rod trav. m: 6.0...6.2 Del.quantity cm3/: 0.7...1.3 Dispersion cm3/: 0.2 : 38...42 Overflow valve : 1 417 413 000 SLEEVE POSITION Control-lever position Inlet press., bar: 1.50 Degree: -3 17min: 800 Calibrating nozzle-holder Speed assembly : 0 681 343 009 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version Speed 1/min: 750 Del.quantity cm3/: 110.5...112.5 1000H.: (108.5...114.5) Dispersion cm3/: 4.00 1000H.: (6.00) Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm HIGHEST RATED SPEED (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Control-lever position degrees: 55...44 per values \_\_\_\_ Testing: 1st c-rod trav.mm : 12.20 Speed 1/min : 770...780 2nd c-rod trav.mm : 4.00 Speed 1/min : 785...805 4th speed 1/min : 955 START OF DELIVERY Test pressure, bar: 25...27 : 2.00...2.10 Prestroke mm : (1.95...2.15) Contr.-rod trav.mm: 7.50...10.50 C-rod trav.mm : 0.30...1.70 Cam sequence : 1-5-3-6-2-LOWEST RATED SPEED I Control-lever

position degrees: 12...20 Setting point w/out aux. spring Speed 1/min: 250 Contr.-rod trav.mm: 6.1
Speed 1/min: 250
C-rod trav.mm : 6.00...6.20
C-rod trav.mm : 2.00

Speed 1/min: 240...300

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 750

C-rod trav.mm : 12.50...12.60 2nd speed 1/min : 700

C-rod trav.mm : 12.50...12.80

Remarks:

Cold-start testing of RSV governor according to VDT-I-420/114.

**B28** 

BOSCH INJ. PUMP TEST SPECIFICATIONS		
Note inst. in remarks column		SD and spacing CS: 0-60-120-180-2/0-300
		SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition	: 12.09.86	SD mark cyl. no. : 1
Test sheet Edition Superceeded Calibrating oil	: ISO-4113	START OF DELIVERY DIFFERENCE
Combination no.	: 0 400 676 180	betw.c-rod trav.mm: 8.509.50 Difference °CS : 2.503.50
Injection pump Pump designation EP type number	: PE6A90D320RS2547	BASIC SETTING
Governor	: RSV2501200A5C2203	1st speed
Governer no.	R	Contrrod trav.mm: 10.8010.90
	1	Del.quantity cm3/ : 7.17.2
Customer-spec. inf Customer	: DAF	100H.: (6.97.4)
Engine	: DT615	Dispersion cm3/: 0.3
TEST BENCH REQUIRE	MENTS	100H.: (0.4)
Calibrating-oil inlet temp. °C	: 3842	2nd speed 1/min: 250.0 Contra-rod trav. m: 5.96.1 Del.quantity cm3/: 0.91.3
Overflow valve	: 1 417 413 000	100H.: (0.71.5) Dispersion cm3/: 0.2 100H.: (0.4)
Inlet press., bar : 1.50		SLEEVE POSITION
Calibrating nozzle assembly	-holder: 1	Control-lever position Degree: -3 Speed 1/min: 800
Opening pressure, bar	: 172175	Controd travelmm: 0.300.70
Test inj. tubing	: 1 680 750 015	Governor-spring reload Notch setting x : 3.25
Outside diameter x Wall thickness x Length mm	: 6.00x1.50x600	FULL-LOAD DELIV. AT FULL-LOAD STOP  1st version Speed 1/min: 1000 Charge press. hPa: 700
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values	Del.quantity cm3/: 71.572.5 1000H.: (69.574.5) Dispersion cm3/: 3.00 1000H.: (4.50)	
START OF DELIVERY Test pressure, bar: 2527  Prestroke mm : 2.202.30   (2.152.35)		HIGHEST RATED SPEED 1st version Control-lever position degrees: 4755

C01

```
2nd c-rod trav.mm : 4.00
            1/min : 1270...1300
  Speed
3rd c-rod trav.mm : 4.00
            1/min: 1305...1335
  Speed
            1/min : 1490
4th speed
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 13...21
Setting point w/out aux. spring
            1/min : 250
Contr.-rod trav.mm: 5.5
           1/min : 250
Speed
               : 5.90...6.10
: 2.00
C-rod trav.mm
C-rod trav.mm
           1/min : 560...620
Speed
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 1000
1st speed
  C-rod trav.mm : 11.10...11.20
            1/min: 400
2nd speed
  C-rod trav.mm : 11.30...11.40
5th speed 1/min: 300
  C-rod trav.mm : 11.50...12.00
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 600
Speed
            hPa : 700
Pressure
Contr.-rod trav.mm: 10.80...10.90
Measurement
           1/min : 600
Speed
1st pressure hPa : -
 C-rod trav.mm
                  : 9.80...10.00
2nd pressure hPa : 250
                  : 10.60...10.70
  C-rod trav.mm
                 : 210
3rd pressure hPa
  C-rod trav.mm
                  : 10.10...10.40
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
           1/min : 600
Speed
Del.quantity cm3/: 51.5...53.5
            1000H.: (49.0...56.0)
Remarks:
Cold-start testing of RSV governor
according to VDT-I-420/114.
```

Note inst. in remarks column Test sheet : DAF 6.2 M 3 : 12.09.86 Edition Superceeded : 10.85 Calibrating oil : ISO-4113 Combination no. : 0 400 676 181 Injection pump Pump designation : PE6A85D32ORS2546 EP type number : 0 410 686 943 Governor Governor design. : RSV250...750A7C2202R Governer no. : 0 420 233 202 Customer-spec. information Customer : DAF : DF615 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00X1.50X600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 : 2.15...2.25 Prestroke mm : (2.10...2.30) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 5- 3- 6- 2-

BOSCH INJ. PUMP TEST SPECIFICATIONS

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) SD mark cyl. no. : 1 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 Difference CS: 3.00...4.00 BASIC SETTING 1st speed 1/mi: 750 Contr.-rod trav.mm: 12.10...12.20 Del.quantity cm3/: 6.7...6.9 100H.: (6.5...7.1) Dispersion cm3/:0.3100H.: (0.5) 1/min: 250.0 2nd speed Contr.-rod trav. m: 8.4...8.6 Del.quantity cm3/: 0.9...1.5 100H.: (0.7...1.7) Dispersion cm3/: 0.2 100H.: (0.4) SLEEVE POSITION Control-lever position Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Notch setting x : 3.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 750 Speed Del.quantity cm3/: 67.0...69.0 1000H.: (65.0...71.0) Dispersion cm3/: 3.00 1000H.: (5.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 36...44 Testing: 1st c-rod trav.mm : 11.1 Speed 1/min: 770...780 2nd c-rod trav.mm : 4.00

1/min: 785...805

Speed

**CO4** 

4th speed 1/min: 955.0 C-rod trav.mm: 0.30...1.40

LOWEST RATED SPEED I

position degrees: 12...20
Setting point w/out aux. spring

Speed 1/min: 250 Contr.-rod trav.mm: 8.5 Speed 1/min: 250

C-rod trav.mm : 8.40...8.60 C-rod trav.mm : 2.00

Speed 1/min: 260...320

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

Remarks: Cold-start testing of RSV governor according to VDT-1-420/114.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                     : DAF 8,3 I 6
                                                         SD mark cyl. no. : 1
                     : 12.09.86
Edition
Superceeded
                                                         START OF DELIVERY DIFFERENCE
Calibrating oil
                     : ISO-4113
                                                         betw.c-rod trav.mm: 8.50...9.50
Difference CS : 4.50...5.50
Combination no.
                     : 0 400 676 182
Injection pump
                                                         BASIC SETTING
                     : PE6A90D410RS2524
Pump designation
EP type number
                     : 0 410 696 179
                                                         1st speed
                                                                         1/mi: 750
Governor
Governor design. : RSV250...750A7C2201L
Governer no. : 0 420 232 444
                                                         Contr.-rod trav.mm: 9.70...9.80
                                                         Del.quantity cm3/: 8.2...8.4
Customer-spec. information
Customer
                     : DAF
                                                                        100H.: (8.0...8.6)
Engine
                     : DH 825
                                                                        cm3/:0.4
                                                         Dispersion
TEST BENCH REQUIREMENTS
                                                                        100H.: (0.5)
Calibrating-oil inlet temp. OC
                                                                        1/min: 250.0
                                                         2nd speed
                                                         Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/: 1.9...2.5
100H.: (1.7...2.7)

Dispersion cm3/: 0.2
                     : 38...42
Overflow valve
                     : 1 417 413 000
                                                                        100H.: (0.4)
Inlet press., bar: 1.50
                                                         SLEEVE POSITION
Calibrating nozzle-holder
                                                         Control-lever position
                 : 0 681 343 009
 assembly
                                                                       Degree: -3
                                                                        17min: 800
                                                         Speed
                                                         Cont.-rod travelmm: 0.30...1.00
Opening.
 pressure, bar : 172...175
                                                         Governor-spring reload
                                                         Notch setting x : 4.50
Test inj. tubing : 1 680 750 015
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                                                         1st version
x Length mm
                     : 6.00x1.50x600
                                                                        1/min: 750
                                                         Speed
                                                        Del.quantity cm3/: 82.5...84.5
1000H:: (80.5...86.5)
Dispersion cm3/: 4.00
1000H:: (5.50)
(A) Injection pump setting values
     Insp. values in parentheses
    Set constant delivery quant.
    per values ____
                                                         HIGHEST RATED SPEED
START OF DELIVERY
                                                         1st version
Test pressure, bar: 25...27
                                                         Control-lever
                                                          position degrees: 41...49
                     : 2.30...2.40
: (2.25...2.45)
Prestroke mm
                                                         Testing:
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6- 2- 4
                                                         1st c-rod trav.mm : 8.70
                                                           Speed 1/min: 770...780
                                                         2nd c-rod trav_mm : 4.00
                                                                      1/min: 785...805
                                                           Speed
CO5
```

4th speed 1/min : 955 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24
Setting point W/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 6.4

Speed 1/min : 250

C-rod trav.mm : 6.30...6.50 C-rod trav.mm : 2.00 Speed 1/min : 260...320

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Nace inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : DAF 8,3 N 6
Test sheet
Edition
                    : 12.09.86
Superceeded
                                                      SD mark cyl. no. : 1
Calibrating oil
                    : ISO-4113
                                                      START OF BELIVERY DIFFERENCE
Combination no.
                    : 0 400 676 185
                                                      betw.c-rod trav.mm: 8.50...9.50
                                                      & c-rod tray max. : 21.0
Difference CS : 3.00...4.00
Injection pump
Pump designation
                    : PE6A95D410RS2525
EP type number
                    : 0 410 696 987
Governor
                                                      BASIC SETTING
Governor design.
                    : RSV250...1200A5C2198
                      -3L
                                                                     1/mi: 1200
                                                      1st speed
Governer no.
                    : 0 420 232 452
                                                      Contr.-rod trav.mm: 10.40...10.50
Customer-spec. information
Customer
                                                      Del.quantity cm3/ : 7.3...7.5
                    : DH 825
Engine
                                                                    100H.: (7.1...7.7)
Speed
              1/min: 2400
                                                      Dispersion
                                                                    cm3/:0.3
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.6)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                    1/min: 250.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.0...6.2
Del.quantity cm3/: 0.7...1.1
Overflow valve
                    : 1 417 413 000
                                                                    100H.: (0.4...1.3)
                                                                    cm3/: 0.3
                                                      Dispersion
                                                                    100H.: (0.5)
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                      SLEEVE POSITION
                   : 0 681 343 009
                                                      Control-lever position
 assembly
                                                                   Degree: -3
1/min: 800
Opening
                                                      Speed
                   : 172...175
                                                      Cont.-rod travelmm: 0.30...0.70
 pressure, bar
                                                      Governor-spring reload
Test inj. tubing : 1 680 750 015
                                                      Notch setting x : 5.00
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
x Length mm
                                                      1st version
                                                     Speed 1/min: 1200
Del.quantity cm3/: 73.0...75.0
(A) Injection pump setting values
                                                                   1000H.: (71.0...77.0) cm3/: 3.50
    Insp. values in parentheses
Set constant delivery quant.
                                                      Dispersion
    per values
                                                                   1000H.: (6.00)
START OF DELIVERY
                                                      HIGHEST RATED SPEED
Test pressure, bar: 25...27
                                                      1st version
                                                      Control-lever
                    : 2.00...2.10
Prestroke mm
                                                      position degrees: 49...57
                    : (1.95...2.15)
Contr.-rod trav.mm: 7.50...10.50
                                                     Testing:
                   : 1-5- 3- 6- 2-
                                                      1st c-rod trav.mm: 9.40
Cam sequence
CO7
```

Speed 1/min: 1240...1250 2nd c-rod trav.mm : 4.00 Speed 1/min: 1280...1310 3rd c-rod trav.mm: 4.00 Speed 1/min: 1340...1370 4th speed 1/min: 1505 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Setting point w/out aux. spring Speed 1/min: 250 Contr.-rod trav.mm: 5.6 Testing: 1/min: 100 Speed C-rod trav.mm min: 19.50 Speed 1/min : 250 C-rod trav.mm : 6.00...6.20 C-rod trav.mm : 2.00 1/min : 655...715 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1200 C-rod trav.mm : 10.40...10.50 2nd speed 1/min: 500 C-rod trav.mm : 11.20...11.30 3rd speed 1/min: 800 C-rod trav.mm : 11.10...11.20 4th speed 1/min : 940 C-rod trav.mm : 10.70...11.00 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 800 Del.quantity cm3/: 75.9...77.0 1000H.: (72.5...79.5) Remarks:

Remarks:
Cold-start testing of RSV governor according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 4,1 E 1 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition : 12.09.86 Superceeded : 1.86 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 834 002 1st speed 1/mi: 1250 Injection pump : PES4A85D410/3RS2707 Pump designation Contr.-rod trav.mm: 12.00...12.10 EP type number : 0 410 884 948 Governor Del.quantity cm3/: 6.9...7.0 Governor design. : RQV300...1250AB1089-100H.: (6.7...7.2) Governer no. : 0 420 212 185 cm3/:0.3Dispersion Customer-spec. information Customer : KHD 100H.: (0.4) Engine : BF4L913T 1/min: 300.0 2nd speed Contr.-rod trav. m: 4.9...5.1 Del.quantity cm3/: 1.0...1.6 100H.: (0.8...1.8) 1st version kW : 64.0 1/min: 2500 Speed cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C (B) Setting of injection pump with : 38 ... 42 externally-mounted governor Overflow valve SLEEVE TRAVELS : 1 417 413 000 1st speed 1/min: 250 Sleeve travel mm: 0.50...0.70 2nd speed 1/min: 450
Sleeve travel mm: 3.10...3.30
3rd speed 1/min: 800 Inlet press., bar: 1.00 Calibrating nozzle-holder : 0 681 343 009 Sleeve travel mm: 4.60...4.70 assembly 4th speed 1/min: 1100 Sleeve travel mm: 6.60...6.80 Opening pressure, bar : 172...175 5th speed 1/min: 1300 Sleeve travel mm: 8.60...8.70 Test in . tubing : 1 680 750 014 SLEEVE POSITION Control-lever position Outside diameter x Wall thickness Degree: -1 1/min: 1290 x Length mm : 6.00x2.00x600 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version per values Speed 1/min: 1250 Del.quantity cm3/: 69.5...70.5 1000H: (67.5...72.5) Dispersion cm3/: 3.00 1000H: (4.50) START OF DELIVERY Test pressure, bar: 25...27 : 2.50...2.60 Prestroke mm : (2.45...2.65) HIGHEST RATED SPEED **CO9** 

```
1st version
Control-lever
 position degrees: 62...70
Testing:
1st c-rod trav.mm : 11.00
           1/min : 1290...1300
  Speed
2nd c-rod trav.mm : 4.00
Speed 1/min : 13/3...1405
4th speed 1/min : 1500
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 6...14
Testing:
Speed
            1/min : 100
C-rod travemm min: 6.40
Speed 1/min : 300
              : 4.90...5.10
: 2.00
C-rod trav.mm
C-rod trav.mm
Speed
           1/min : 355...415
TORQUE CONTROL
Dimension a mm : 0.35
Torque-control curve - 1st version
1st speed 1/min : 1250
  C-rod trav.mm : 12.00...12.10
           1/min : 650
2nd speed
C-rod trav.mm : 12.60...12.70
3rd speed 1/min : 915
  C-rod trav.mm : 12.40...12.60
4th speed 1/min: 985
  C-rod trav.mm : 12.00...12.30
SWITCH-OVER POINT
           1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
Speed
          1/min : 650
Del.quantity cm3/: 58.5...60.5
            $000H.: (56.0...63.0)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : KHD 5,1 G BASIC SETTING Edition : 12.09.86 Superceeded 1st speed 1/mi: 1400 Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.60...11.70 Combination no. : 0 400 835 007 Del.quantity cm3/ : 6.5...6.6 Injection pump Pump designation : PES5A80D410/3RS2555 100H.: (6.3...6.7) EP type number : 0 410 885 006 Governor cm3/:0.2Dispersion Governor design. : RQ275/1400AB798DL Governer no. : 0 420 202 239 100H.: (0.4) Customer-spec. information 1/min: 275.0 2nd speed Contr.-rod trav. m: 8.2...8.4 Customer : KHD Del.quantity cm3/: 0.9...1.5 Engine : F5L912 100H.: (0.7...1.6) cm3/:0.2Dispersion 100H.: (0.4) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -1 1/min: 650 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 15.60...16.40 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.00 Calibrating nozzle-holder 1st version : 0 681 343 009 1/min: 1400 assembly Speed Del.quantity cm3/: 65.0...66.0 1000H:: (63.5...67.5) Dispersion cm3/: 2.50 Opening pressure, bar : 172...175 1000H.: (4.00) Test inj. tubing : 1 680 750 014 HIGHEST RATED SPEED Outside diameter Setting point: x Wall thickness 1/min : 650 Speed : 6.00x2.00x600 x Length mm Contr.-rod trav.mm: 16.0 (A) Injection pump setting values Testing: Insp. values in parentheses 1st c-rod trav.mm : 10.60 Set constant delivery quant. Speed 1/min: 1445...1460 per values \_\_\_\_ 2nd c-rod trav.mm : 4.00 Speed 1/min: 1535...1565 4th speed 1/min: 1650 C-rod trav.mm: 0.00...1.00 START OF DELIVERY Test pressure, bar: 25...27 LOWEST RATED SPEED I : 1.90...2.00 Prestroke mm : (1.85...2.05) Setting point w/out aux. spring Contr.-rod trav.mm: 9.00...12.00 1/min : 275 Speed Cam sequence : 1- 3- 5- 4- 2 Contr.-rod trav.mm: 5.5 Testing:

Speed 1/min: 100 C-rod trav.mm min: 7.00 Speed 1/min: 275 C-rod trav.mm: 5.40...5.60 C-rod trav.mm: 2.00 Speed 1/min: 430...470 Speed 1/min: 550 C-rod trav.mm max: 1.00

## TORQUE CONTROL

Dimension a mm : 0.65

Torque-control curve - 1st version 1st speed 1/min: 1400

C-rod trav.mm : 11.60...11.70

2nd speed 1/min: 650

C-rod trav.mm : 13.00...13.20

3rd speed 1/min: 810

C-rod trav.mm : 12.60...12.80

4th speed 1/min: 1015

C-rod trav.mm : 11.80...12.10

Remarks:

```
Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                       SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
                    : KHD 6,1 A 2
                    : 12.09.86
Edition
Superceeded
                   : 4.85
Calibrating oil
                  : ISO-4113
                                                       BASIC SETTING
Combination no.
                    : 0 400 836 016
                                                                       1/mi: 720
                                                       1st speed
Injection pump
                                                       Contr.-rod trav.mm: 12.30...12.40
Pump designation : PES6A85D410/3RS2415
EP type number
                    : 0 410 886 915
                                                       Del.quantity cm3/: 8.4...8.5
Governor
Governor design. : RQV750AB1004L
Governer no. : 0 420 212 093
                                                                      100H.: (8.2...8.7)
                                                                      cm3/:0.3
                                                       Dispersion
Customer-spec. information
Customer
                    : KHD
                                                                      100H.: (0.5)
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Engine
                    : BF6L913
1st version kW : 70.0
                                                       1st version
                                                       Speed 1/min: 720
Del.quantity cm3/: 84.0...85.0
1000H.: (82.0...87.0)
Dispersion cm3/: 3.00
Speed
              1/min: 1500
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                    1000H.: (5.00)
                    : 38., 42
                                                       HIGHEST RATED SPEED
Overflow valve
                                                       1st version
                    : 1 417 415 600
                                                       Control-lever
                                                        position degrees: 21...29
Inlet press., bar : 1.00
                                                       Testing:
                                                       1st c-rod trav.mm : 11.30
Speed 1/min : 760...765
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                       2nd c-rod trav.mm : 4.00
Speed 1/min : 789...799
Opening
 pressure, bar : 172...175
                                                       4th speed
                                                                    1/min : 820
                                                         C-rod trav.mm : 0.00...1.00
Test inj. tubing : 1 680 750 014
                                                       SWITCH-OVER POINT
                                                       Speed 1/min: 660
Outside diameter
x Wall thickness
                   : 6.00X2.00X600
x Length mm
(A) Injection pump setting values
                                                       Remarks:
    Insp. values in parentheses
Set constant delivery quant.
                                                       A output
    per values
START OF DELIVERY
Test pressure, bar: 25...27
                                                       APPLICATION
                    : 1.90...2.00
Prestroke mm
                    : (1.85...2.05)
Contr.-rod trav.mm: 9.00...12.00
```

C13

Generator set C14

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
                                                    SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Test sheet
                   : KHD 6,1 0
Edition
                   : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                    BASIC SETTING
                   : 0 400 836 019
Combination no.
                                                    1st speed
                                                                   1/mi: 1250
Injection pump
                                                    Contr.-rod trav.mm: 12.50...12.60
Pump designation : PES6A80D410/3RS2527
EP type number
                   : 0 410 886 059
                                                    Del.quantity cm3/: 6.6...6.7
Governor
Governor design. : RQ300/1250AB935-2L
                                                                  100H.: (6.5...6.9)
Governer no.
                   : 0 420 200 107
                                                    Dispersion
                                                                  cm3/:0.2
Customer-spec. information
Customer
                   : KHD
                                                                  1GOH.: (0.3)
Engine
                   : F6L912
                                                    2nd speed
                                                                  1/min: 300.0
                                                    Contr.-rod trav. m: 8.9...9.1
                                                    Del.quantity cm3/: 0.7...1.3
Dispersion cm3/: 0.2
1st version kW : 89.0
              1/min: 2500
Speed
TEST BENCH REQUIREMENTS
                                                    SLEEVE POSITION
                                                    Control-lever position
Calibrating-oil inlet temp. °C
                                                                 Degree: -2
1/min: 800
                   : 38...42
                                                    Speed
                                                    Cont.-rod travelmm: 19.20...20.80
Overflow valve
                   : 1 417 413 000
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.00
                                                    1st version
                                                                  1/min: 1250
                                                    Speed
                                                    Del.quantity cm3/: 66.5...67.5
1000H.: (65.0...69.0)
Dispersion cm3/: 2.50
Calibrating nozzle-holder
                : 5 681 343 009
 assembly
                                                                 1000H.: (3.50)
Opening
pressure, bar : 172...175
                                                    HIGHEST RATED SPEED
Test inj. tubing : 1 680 750 014
                                                    Setting point:
                                                                1/min : 800
                                                    Speed
Outside diameter
                                                    Contr.-rod trav.mm: 20.0
x Wall thickness
x Length mm
               : 6.00x2.00x600
                                                    Testing:
                                                    1st c-rod trav.mm : 11.50
                                                                1/min : 1295...1310
(A) Injection pump setting values
                                                      Speed
    Insp. values in parentheses
Set constant delivery quant.
                                                    2nd c-rod trav.mm : 4.00
                                                                1/min: 1375...1405
                                                      Speed
    per values ____
                                                    LOWEST RATED SPEED I
START OF DELIVERY
                                                    Setting point w/out aux. spring
                                                                1/min : 300
Test pressure, bar: 25...27
                                                    Speed
                                                    Contr.-rod trav.mm: 8.5
                   : 1.90...2.00
Prestroke mm
                   : (1.85...2.05)
                                                    Testing:
Contr.-rod trav.mm: 9.00...12.00
                                                    Speed
                                                             1/min : 100
C15
```

C-rod trav.mm min : 9.50 Speed 1/min : 300 C-rod trav.mm : 8.40...8.60 C-rod trav.mm : 2.00 Speed 1/min : 605...645

TORQUE CONTROL

Dimension a mm : 1.30

Torque-control curve - 1st version
1st speed 1/min: 1250
C-rod trav.mm: 12.50...12.60
2nd speed 1/min: 800

C-rod trav.mm : 13.80...13.90

3rd speed 1/min : 910

C-rod trav.mm : 13.40...13.60

4th speed 1/min : 1045

C-rod trav.mm : 12.70...13.00

SWITCH-OVER POINT

1/min : 220 (240) Speed

FUEL-DELIVERY CHARACTERISTICS

1/min : 800 Speed

Del.quantity cm3/: 71.5...73.5

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS : 1-5-3-6-2-4 Cam sequence Note inst. in remarks column Test sheet SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) : MAN 11,1P22 : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 SD mark cyl. no. : 6 Combination no. : 0 400 836 029 BASIC SETTING Injection pump 1/mi: 1100 1st speed Pump designation : PES6A95D410LS2542-1 EP type number : 0 410 896 912 Contra-rod trav.mm: 12.00...12.10 Governor Governor design. : RQ250/1100AB1137-2L Governor no. : 0 420 200 084 Del.quantity cm3/: 12.4...12.6 100H.: (12.2...12.8) Customer-spec, information cm3/:0.3Customer : MAN Dispersion Engine : D2566M/MF 100H.: (0.6) 1st version kW : 177.0 2nd speed 1/min: 250.0 Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/: 0.8...1.4

100H: (0.5...1.6)

Dispersion cm3/: 0.3

100H: (0.5) Speed 1/min: 2200 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 000 Degree: -1 Speed 17min: 600 Cont.-rod travelmm: 15.60...16.40 Inlet press., bar : 1.00 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version Opening. Speed 1/min: 1100 Del.quantity cm3/: 124.5...126.5 1000H.: (122.5...128.5) Dispersion cm3/: 3.00 pressure, bar : 172...175 1000H.: (6.00) Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00x2.00x600 Setting point: Speed 1/min: 600 (A) Injection pump setting values Contr.-rod trav.mm: 16.0 Insp. values in parentheses Set constant delivery quant. Testing: per values 1st c-rod trav.mm : 11.00 Speed 1/min: 1145...1160 2nd c-rod trav.mm: 4.00 START OF DELIVERY Test pressure, bar: 25...27 1/min : 1205...1235 Speed : 1.50...1.60 Prestroke mm LOWEST RATED SPEED I : (1.45...1.65) Setting point w/out aux. spring Contr.-rod trav.mm: 9.00...12.00 Speed 1/min : 250

C17

Contr.-rod trav.mm: 6.0 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.50 1/min : 250 Speed C-rod trav.mm : 5.90...6.10 : 2.00 C-rod trav.mm 1/min : 360...400 Speed TORQUE CONTROL Dimension a mm :-Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 12.00...12.10 2nd speed 1/min: 600 C-rod trav.mm : 12.00...12.20 FUEL-DELIVERY CHARACTERISTICS 

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                            : 1-5-3-6-2-4
                                                        Cam sequence
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Trierance + - : 0.50 (0.75)
                     : MAN 11,4 B3
Edition
                    : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                        SD mark ryl. no. : 6
Combination no. : 0 400 836 031
                                                        BASIC SECURIG
Injection pump
                                                                    1/mi: 700
                                                        1st speed
Pump designation : PES6A95D410LS2639-2
                                                        Contr.-rod trav.mm: 14.30...14.50
EP type number : 0 410 896 910
Governor
Governor design. : RQ250/1100AB1137-9L
Governer no. : 0 420 200 091
                                                        Del.quantity cm3/: 13.0...13
                                                                       100H.: (12.8...13 4)
Customer-spec. information
Customer
                    : MAN
                                                        Dispersion
                                                                      cm3/:0.3
Engine
                    : D2566MF/200
                                                                       100H.: (0.6)
1st version kW : 162.0
                                                        2nd speed
                                                                       1/min: 250.0
                                                       Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/: 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/: 0.3

100H.: (0.5)
Speed
               1/min: 2200
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                     : 38...42
                                                        SLEEVE POSITION
Overflow valve
                                                        Control-lever position
                     : 1 417 413 000
                                                                     Degree: -1
                                                                      17min: 600
                                                        Speed
                                                        Cont.-rod travelmm: 15.60...16.40
Inlet press., bar: 1.00
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                 : 0 681 343 009
 assembly
                                                        1st version
Opening
                                                        Speed
                                                                      1/min: 700
                                                       Del.quantity cm3/: 130.0...132.0
1000H.: (128.0...134.0)
Dispersion cm3/: 3.50
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 014
                                                                     1000H.: (6.00)
                                                        HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                : 6.00x2.00x600
x Length mm
                                                        Setting point:
                                                                 1/min : 600
                                                        Speed
                                                        Contr.-rod trav.mm: 16.0
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
    per values ____
                                                        1st c-rod trav.mm : 11.80
                                                                    1/min : 1145...1160
                                                          Speed
                                                       2nd c-rod trav.mm : 4.00
Speed 1/min : 1240...1270
4th speed 1/min : 1350
START OF DELIVERY
Test pressure, bar: 25...27
Prestroke mm
                     : 1.50...1.60
                                                          C-rod trav.mm : 0.00...1.00
                    : (1.45...1.55)
Contr.-rod trav.mm: 9.00...12.00
                                                       LOWEST RATED SPEED I
C19
```

Setting point w/out aux. spring Speed 1/min : 250 Contr.-rod trav.mm: 6.0 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.50 Speed 1/min: 250 C-rod trav.mm : 5.90...6..10 C-rod trav.mm : 2.00 Speed 1/min: 360...400 TORQUE CONTROL Dimension a mm : 0.60 Torque-control curve - 1st version 1st speed 1/min: 1100 C-rod trav.mm: 12.80...12.90 2nd speed 1/min: 600 C-rod trav.mm : 14.30...14.40 3rd speed 1/min: 865 C-rod trav.mm : 13.80...14.60 4th speed 1/min: 940 C-rod trav.mm : 13.10...13.30 FUEL-DELIVERY CHARACTERISTICS 1000H.: (119.5...128.5) Remarks: : MAN-NR. 2-7729

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Contr.-rod trav.mm: 9.00...12.00
                                                         Cam seguence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                     : KHD 6,1 N
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                     : 14.11.86
Edition
Superceeded
Calibrating oil
                    : ISO-4113
                                                         BASIC SETTING
                     : 0 400 836 034
Combination no.
                                                         1st speed
                                                                         1/mi: 1250
Injection pump
Pump designation
                     : PES6A85D410/3RS2730
                                                         Contr.-rod trav.mm: 13.20...13.30
EP type number
                     : G 410 886 897
Governor
                                                         Del.quantity cm3/ : 8.4...8.5
                     : RQV300...1250AB1188-
Governor design.
                       1L
                                                                        100H.: (8.2...8.7)
Governer no. : 0 420 212 205
                                                         Dispersion
                                                                        cm3/:0.3
Customer-spec. information
Customer
                                                                        100H.: (0.4)
Engine
                     : BF6L913
                                                         2nd speed
                                                                        1/min: 300.0
                                                        Contr.-rod trav. m: 5.9...6.1
Del.quantity cm3/: 1.0...1.6
100H.: (0.8...1.8)
1st version kW : 110.0
Speed
               1/min: 2500
                                                                        cm3/: 0.2
100H.: (0.4)
                                                         Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                         (B) Setting of injection pump with externally-mounted governor
                     : 38...42
Overflow valve
                                                         SLEEVE TRAVELS
                     : 1 417 413 000
                                                         1st speed 1/min: 300
                                                           Sleeve travel mm: 1.20...1.30
Inlet press., bar: 1.00
                                                         2nd speed 1/min: 370
                                                        Sleeve travel mm: 2.30...2.60
3rd speed 1/min: 540
Sleeve travel mm: 3.20...3.80
4th speed 1/min: 1290
Calibrating nozzle-holder
               : 0 681 343 009
 assembly
                                                           Sleeve travel mm: 8.50...8.70
Opening
 pressure, bar : 172...175
                                                        5th speed 1/min: 1335
                                                           Sleeve travel mm: 9.50...9.70
Test inj. tubing : 1 680 750 014
                                                        SLEEVE POSITION
                                                        Control-lever position
Outside diameter
                                                                      Degree: -1
1/min: 1290
x Wall thickness
                : 6.00x2.00x600
                                                        Cont.-rod travelmm: 15.20...17.80
x Length mm
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        1st version
    per values ____
                                                        Speed
                                                                       1/min: 1250
                                                        Charge press. hPa: 900
Del.quantity cm3/: 84.5...85.5
1000H: (82.5...87.5)
Dispersion cm3/: 3.00
START OF DELIVERY
Test pressure, bar: 25...27
Prestroke mm : 2.20...2.30
                                                                      1000H.: (4.50)
                     : (2.15...2.35)
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 12.20 1/min : 1290...1300 Speed 2nd c-rod trav.mm: 4.00 1/min : 1385...1415 Speed 1/min: 1550 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: Speed 1/min : 100 C-rod trav.mm min : 7.50 Speed 1/min : 300 : 5.90...6.10 C-rod trav.mm CONSTANT REGULATION 1/min : 360...470 Speed TORQUE CONTROL Dimension a mm : 0.80 Torque-control curve - 1st version 1/min : 1250 1st speed C-rod trav.mm : 13.20...13.30 1/min : 500 2nd speed C-rod trav.mm : 14.00...14.10 3rd speed 1/min : 740 : 13.70...13.90 C-rod trav.mm 4th speed 1/min: 850 C-rod trav.mm : 13.40...13.50 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.40...13.50 Measurement 1/min: 500 Speed 1st pressure hPa : -: 11.80...11.90 C-rod trav.mm 2nd pressure hPa : 425 C-rod trav.mm : 12.90...13.00 3rd pressure hPa : 320 : 12.10...12.30 C-rod trav.mm SWITCH-OVER POINT

1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa: 900
Speed 1/min: 850
Del.quantity cm3/: 81.0...83.0
1000H:: (78.5...85.5)
Charge press. hPa: Speed 1/min: 500
Del.quantity cm3/: 54.5...56.5
1000H:: (52.5...58.5)

Remarks:

Speed

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 1 Edition : 12.09.86 Superceeded : 7.85 Calibrating oil : ISO-4113

Combination no. : 0 400 844 084

Injection pump

Pump designation : PES4A90D41ORS2666 EP type number : 0 410 894 029

Governor

Governor design. : RQV300...1400AB1201-

1L

: 0 420 212 176 Governer no.

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M364

1st version kW : 55.0 Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2.25...2.35 Prestroke mm

: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00 Control-lever Cam sequence : 1- 3- 4- 2 position degrees: 59...67 Testing: 1st c-rod trav.mm : 9.90 SD ang. spacing<sup>0</sup>CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Speed 1/min: 1440...1450 2nd c-rod trav.mm: 4.00 Speed 1/min: 1550...1580 th speed 1/min: 1630 C-rod trav.mm: 0.00...1.00 BASIC SETTING 4th speed 1/mi: 1400 1st speed LOWEST RATED SPEED I Contr.-rod trav.mm: 10.90...11.00 Control-lever position degrees: 20...28 Del.quantity cm3/: 6.3...6.4 Testing: 100H.: (6.1...6.6) 1/min : 100 Speed C-rod trav.mm min : 10.20 Speed 1/min : 300 cm3/: 0.3 Dispersion C-rod trav.mm : 8.60...8.80 100H.: (0.4) **CONSTANT REGULATION** 2nd speed 1/min: 300.0 Speed 1/min: 540...680 Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 0.8...1.2 TORQUE CONTROL 100H.: (0.6...1.4) Dimension a mm : 1.00 cm3/: 0.2 100H.: (0.4) Dispersion Torque-control curve - 1st version 1st speed 1/min: 1400 C-rod trav.mm: 10.90...11.00 2nd speed 1/min: 500 C-rod trav.mm: 11.90...12.00 3rd speed 1/min: 700 (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS C-rod trav.mm : 11.60...11.90 4th speed 1/min: 900 1st speed 1/min: 300 Sleeve travel mm: 0.80...1.30 C-rod trav.mm : 11.40...11.60 2nd speed 1/min: 500 Sleeve travel mm: 2.30...2.80
3rd speed 1/min: 750 SWITCH-OVER POINT 1/min : 220 (240) Speed Sleeve travel mm: 4.10...4.30 4th speed 1/min: 1500 Sleeve travel mm: 8.50...8.60 FUEL-DELIVERY CHARACTERISTICS 1/min : 500 Speed Del.quantity cm3/: 50.0...53.0 1000H:: (47.5...55.5) SLEEVE POSITION 1000H.: (5.50)
Speed 1/min: 900
Del.quantity cm3/: 52.5...55.5 Control-lever position Degree: -1 17min: 1500 Speed 1000H.: (50.0...58.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1400 Remarks: Speed Del.quantity cm3/: 63.5...64.5 1000H.: (61.5...66.5) cm3/: 3.00 Dispersion 1000H.: (4.50)

HIGHEST RATED SPEED

1st version

BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet Edition Superceeded SD ang. spacing  $^{0}$ CS: 0-90-180-270 Tolerance + -  $^{0}$ : 0.50 (0.75) : LIE 5,6 B : 12.09.86 : 4.86 Calibrating oil : ISO-4113 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 9.00...12.00 Difference CS : 4.00...5.00 Combination no. : 0 400 844 085 Injection pump Pump designation : PES4A100D410RS2686 EP type number : 0 410 804 001 BASIC SETTING Governor 1st speed 1/mi: 1000 Governor design. : RQV400...1000AB1203L Governer no. : 0 420 212 177 Contr.-rod trav.mm: 11.40...11.50 Customer-spec. information Del.quantity cm3/: 12.1...12.3 Customer : LIEBHERR 100H.: (11.9...12.5) Engine : D904T Dispersion cm3/:0.31st version kW : 100.0 1/min: 2000 Speed 100H.: (0.6) TEST BENCH REQUIREMENTS 1/min: 400.0 2nd speed Contr.-rod trav. m: 6.6...6.8

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/: 0.3

100H.: (0.5) Calibrating-oil inlet temp. OC : 40...45 Overflow valve : 1 417 413 000 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor Calibrating nozzle-holder SLEEVE TRAVELS : 0 681 343 009 assembly 1st speed 1/min: 375 Sleeve travel mm: 1.00...1.10
2nd speed 1/min: 600
Sleeve travel mm: 3.70...4.00
3rd speed 1/min: 1000 Opening pressure, bar : 172...175 Sleeve travel mm: 7.50...7.60 4th speed 1/min: 1150 Test inj. tubing : 1 680 750 008 Sleeve travel mm: 9.50...10.20 Outside diameter x Wall thickness SLEEVE POSITION x Length mm : 6.00x2.00x600 Control-lever position Degree: 1 1/min: 1070 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP per values \_\_\_\_ START OF DELIVERY 1st version Test pressure, bar: 25...27 1/min: 1000 Speed Charge press. hPa: 800
Del.quantity cm3/: 121.5...123.5
1000H.: (119.5...125.5) : 2.70...2.80 : (2.65...2.85) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 **C26** 

Dispersion cm3/ : 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 60...68 Testing: 1st c-rod trav.mm : 10.40 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 Speed 1/min: 1110...1140 1/min : 1250 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 12...20 Testing: Speed 1/min : 100 C-rod trav.mm min : 8.20 1/min : 400 Speed C-rod trav.mm : 6.60...6.80 CONSTANT REGULATION 1/min: 420...530 Speed TORQUE CONTROL Dimension a mm : 1.40 Torque-control curve - 1st version 1st speed 1/min : 1000 C-rod trav.mm : 11.40...11.50 2nd speed 1/min: 500 C-rod trav.mm : 12.80...12.90 3rd speed 1/min: 860 C-rod trav.mm : 12.30...12.50 4th speed 1/min : 920 C-rod trav.mm : 11.80...12.00 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 800 Speed Pressure Contr.-rod trav.mm: 12.80...12.90 Measurement 1/min : 500 Speed 1st pressure hPa : -: 11.40...11.50 C-rod trav.mm 2nd pressure hPa : 700 : 12.30...12.40 C-rod trav.mm 3rd pressure hPa : 655

: 11.80...12.00

Remarks:

C-rod trav.mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 3 Edition : 12.09.86

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 400 844 087

Injection pump

Pump designation : PES4A90D410RS2666

EP type number : 0 410 894 029

Governor

Governor design. : RQV300...1400AB1065-

: 0 420 212 169 Governer no.

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M364 Engine

1st version kW : 66.0 1/min: 2800 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35

: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Control-lever position degrees: 59...67 Testing: 1st c-rod trav.mm: 9.90 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Speed 1/min: 1440...1450 2nd c-rod trav.mm: 4.00 Speed 1/min: 1550...1580 4th speed 1/min: 1630 BASIC SETTING C-rod trav.mm : 0.00...1.00 1st speed 1/mi: 1400 LOWEST RATED SPEED I Contr.-rod trav.mm: 10.90...11.00 Control-lever position degrees: 20...28 Del.quantity cm3/: 6.3...6.4 Testing: 100H.: (6.1...6.6) Speed 1/min : 100 · C-rod trav.mm min: 10.20 Speed 1/min: 300 cm3/: 0.3 Dispersion C-rod trav.mm : 8.60...8.80 100H.: (0.4) CONSTANT REGULATION 1/min: 300.0 2nd speed 1/min : 540...680 Speed Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 0.8...1.2 100H.: (0.6...1.4) TORQUE CONTROL Dimension a mm : 1.00 cm3/: 0.2 100H.: (0.4) Dispersion Torque-control curve - 1st version 1st speed 1/min: 1400 C-rod trav.mm: 10.90...11.00 2nd speed 1/min: 500 (B) Setting of injection pump with externally-mounted governor C-rod trav.mm : 11.90...12.00 3rd speed 1/min : 700 SLEEVE TRAVELS C-rod trav.mm : 11.60...11.90 1st speed 1/min: 300 4th speed 1/min: 900 Sleeve travel mm: 0.80...1.30 C-rod trav.mm : 11.40...11.60 2nd speed 1/min: 500
Sleeve travel mm: 2.30...2.80
3rd speed 1/min: 750 SWITCH-OVER POINT Speed 1/min : 220 (240) Sleeve travel mm: 4.10...4.30 4th speed 1/min: 1500 FUEL-DELIVERY CHARACTERISTICS Sleeve travel mm: 8.50...8.60 SLEEVE POSITION Control-lever position Degree: -1 1/min: 1500 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1400 Speed Remarks: Del.quantity cm3/: 63.5...64.5 1000H: (61.5...66.5) Dispersion cm3/: 3.00 1000H.: (4.50)

HIGHEST RATED SPEED

1st version

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : MB 4.0 A 2 : 12.09.86 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition Superceeded : ISO-4113 Calibrating oil BASIC SETTING Combination no. : 0 400 844 088 1st speed 1/mi: 1400 Injection pump Pump designation : PES4A90D410RS2666 Contr.-rod trav.mm: 10.90...11.00 EP type number : 0 410 894 029 Del.quantity cm3/: 6.3...6.4 Governor Governor design.: RQV300...1400AB1065-100H.: (6.1...6.6) 10L Governer no. : 0 420 212 203 cm3/:0.3Dispersion Customer-spec. information 100H.: (0.4) Customer : DAIMLER-BENZ Engine : 0M364 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 0.8...1.2 1st version kW : 66.0 100H.: (0.6...1.4) Speed 1/min: 2800 cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC (B) Setting of injection pump with externally-mounted governor : 38...42 Overflow valve SLEEVE TRAVELS : 1 417 413 000 1st speed 1/min: 300 Sleeve travel mm: 0.80...1.30 Inlet press., bar : 1.00 2nd speed 1/min: 500 Sleeve travel mm: 2.30...2.80
3rd speed 1/min: 750
Sleeve travel mm: 4.10...4.30 Calibrating nozzle-holder : 0 681 343 009 assembly 4th speed 1/min: 1500 Sleeve travel mm: 8.50...8.60 Opening pressure, bar : 172...175 SLEEVE POSITION Control-lever position Test inj. tubing : 1 680 750 015 Degree: -1 17min: 1500 Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. 1/min: 1400 Speed Del.quantity cm3/: 63.5...64.5 1000H.: (61.5...66.5) cm3/ : 3.00 per values \_\_\_\_ Dispersion 1000H.: (4.50) START OF DELIVERY Test pressure, bar: 25...27 HIGHEST RATED SPEED Prestroke mm : 2.25...2.35 1st version : (2.20...2.40)

D03

```
Control-lever
 position degrees: 59...67
Testing:
1st c-rod trav.mm : 9.90
           1/min : 1440...1450
  Speed
2nd c-rod trav.mm: 4.00
            1/min : 1545...1575
  Speed
4th speed 1/min: 1630
C-rod trav.mm: 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 17...25
Setting point w/out aux. spring
             1/min : 300
Contr.-rod trav.mm: 8.7
Testing:
Speed 1/min: 100
C-rod trav.mm min: 10.20
Speed 1/min: 300
                  : 8.60...8.80
C-rod trav.mm
CONSTANT REGULATION
              1/min : 540...680
Speed
TORQUE CONTROL
Dimension a mm : 1.00
Torque-control curve - 1st version
1st speed 1/min: 1400
  C-rod trav.mm : 10.90...11.00
2nd speed 1/min: 500
C-rod trav.mm : 11.90...12.00
3rd speed 1/min : 700
  C-rod trav.mm : 11.60...11.90
4th speed 1/min: 900
  C-rod trav.mm : 11.40...11.60
SWITCH-OVER POINT
              1/min: 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
              1/min : 500
Speed
Del.quantity cm3/: 50.0...53.0
1000H.: (47.5...55.5)
1000H.: (5.50)
Speed 1/min: 900
Del.quantity cm3/: 52.5...55.5
1000H.: (50.0...58.0)
```

SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column SD mark cyl. no. : 5 Test sheet : MAN 9,2 I 3 Edition : 12.09.86 BASIC SETTING Superceeded Calibrating oil : ISO-4113 1/mi: 1100 1st speed Contr.-rod trav.mm: 11.00...11.10 Combination no. : 0 400 845 065 Injection pump Del.quantity cm3/: 11.1...11.2 Pump designation : PES5A95D410LS2543 EP type number : 0 410 895 978 100H.: (10.9...11.4) Governor Governor design.: RQ250/1100AB1137-3L cm3/:0.3Dispersion Governer no. : 0 420 200 085 100H.: (0.6) Customer-spec, information 2nd speed 1/min: 250.0 Contr.-rod trav. m: 5.9...6.1 Customer : MAN Del.quantity cm3/: 0.9...1.5 100H:: (0.6...1.7) Dispersion cm3/: 0.3 100H:: (0.5) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. <sup>D</sup>C : 38 ... 42 Overflow valve SLEEVE POSITION : 1 417 413 000 Speed 1/min: 600 Cont.-rod travelmm: 15.60...16.40 Inlet press., bar : 1.00 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version 1/min: 1100 Speed Del.quantity cm3/: 111.5...112.5 1000H.: (109.5...114.5) Dispersion cm3/: 3.00 1000H.: (6.00) Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 HIGHEST RATED SPEED Outside diameter x Wall thickness Setting point: : 6.00x2.00x600 x Length mm Speed 1/min : 600 Contr.-rod trav.mm: 16.0 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.00 Speed 1/min : 1145...1160 2nd c-rod trav.mm : 4.00 per values \_\_\_\_ START OF DELIVERY Speed 1/min: 1185...1215 Test pressure, bar: 25...27 LOWEST RATED SPEED I Setting point w/out aux. spring Prestroke mm : 1.50...1.60 : (1.45...1.65) Speed 1/min: 250 Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 5- 4-Contr.-rod frav.mm: 6.0 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.50

Speed

1/min : 250

: 5.90...6.10 C-rod trav.mm C-rod trav.mm : 2.00 1/min : 355...395 Speed TORQUE CONTROL Dimension a mm : 0.35 Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 11.00...11.10 2nd speed 1/min: 500 C-rod trav.mm : 11.70...11.80 3rd speed 1/min: 750 C-rod trav.mm : 11.50...11.70 4th speed 1/min: 930 C-rod trav.mm : 11.10...11.30

## FUEL-DELIVERY CHARACTERISTICS

Del.quantity cm3/: 106.5...110.5 1000H.: (104.0...113.0)

Dispersion

cm3/:-1000H.: (7.00)

BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence : 1- 3- 5- 4- 2 Note inst. in remarks column Test sheet SD ang. spacing  $^{0}$ CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) : MAN 9,2 I 4 Edition : 12.09.86 Superceeded : 9.83 : ISO-4113 Calibrating oil SD mark cyl. no. : 5 Combination no. : 0 400 845 066 BASIC SETTING Injection pump 1/mi: 700 1st speed Pump designation : PESSA95D410LS2543Y EP type number : 0 410 895 976 Contr.-rod trav.mm: 11.00...11.10 Governor Governor design. : RQ250/1100AB1137-3L Del.quantity cm3/: 9.2...9.4 Governer no. : 0 420 200 085 100H.: (9.0...9.6) Customer-spec, information Customer : MAN Dispersion cm3/:0.3: D2565 M/MF Engine 100H.: (0.6) 1st version kW : 123.6 1/min: 250.0 2nd speed 1/min: 2200 Speed Contr.-rod trav. m: 6.8...7.0 Del.quantity cm3/: 0.9...1.5 100H.: (0.6...1.7) TEST BENCH REQUIREMENTS cm3/: 0.3 100H.: (0.5) Dispersion Calibrating-oil inlet temp. <sup>D</sup>C : 38...42 SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 000 Degree: -1 Speed 17min: 600 Inlet press., bar : 1.00 Cont.-rod travelmm: 15.60...16.40 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version Opening 1/min: 700 Speed Del.quantity cm3/: 92.5...94.5 1000H: (90.5...96.5) Dispersion cm3/: 3.00 pressure, bar : 172...175 1000H.: (6.00) Test inj. tubing : 1 680 750 003 HIGHEST RATED SPEED Outside diameter x Wall thickness x Length mm : 6.00X2.00X600 Setting point: 1/min : 600 Speed (A) Injection pump setting values Contr.-rod trav.mm: 16.0 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm : 9.20 1/min : 1145...1160 Speed START OF DELIVERY 2nd c-rod trav.mm : 4.00 Test pressure, bar: 25...27 1/min : 1180...1210 Speed 4th speed 1/min: 1300 : 1.50...1.60 : (1.45...1.65) : 0.00...1.00 Prestroke mm C-rod trav.mm Contr.-rod trav.mm: 9.00...12.00 LOWEST RATED SPEED I **DO7** 

Setting point w/out aux. spring 1/min : 250 Speed Contr.-rod trav.mm: 6.9 Testing: Speed  $1/\min : 100$ C-rod trav.mm min: 8.40 1/min : 250 Speed : 6.80...7.00 C-rod trav.mm nm : 2.00 1/min : 380...440 C-rod trav.mm Speed TORQUE CONTROL Dimension a mm : 0.35 Torque-control curve - 1st version 1st speed 1/min : 700 C-rod trav.mm : 11.00...11.10 2nd speed 1/min : 1100 C-rod trav.mm : 10.20...10.40 3rd speed 1/min : 500 C-rod trav.mm : 11.00...11.10 4th speed 1/min : 850 C-rod tray.mm : 10.50...10.70 FUEL-DELIVERY CHARACTERISTICS 1/min : 1100 Speed Del.quantity cm3/: 94.5...98.5 1000H.: (92.5...100.5) Speed 1/min: 500 Del.quantity cm3/: 90.5...94.5 1000H.: (88.5...96.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence : 1- 3- 5- 4- 2 Note inst. in remarks column Test sheet SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) : MAN 9,2 I 5 : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 SD mark cyl. no. : 5 Combination no. : 0 400 845 067 BASIC SETTING Injection pump 1st speed 1/mi: 1100 Pump designation : PES5A95D410LS2543 EP type number : 0 410 895 978 Contr.-rod trav.mm: 11.00...11.10 Governor Governor design. : RQ250/1100AB1137-3L Governer no. : 0 420 200 085 Del.quantity cm3/: 11.1...11.2 100H.: (10.9...11.4) Customer-specs information cm3/ : 0.3 Customer : MAN Dispersion : D2565 M/MF Engine 100H.: (0.6) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 5.9...6.1 Del.quantity cm3/: 1.4...1.9 100H.: (1.1...2.1) Dispersion cm3/: 0.3 100H.: (0.5) 1st version kW : 192.0 1/min: 2200 Speed TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 SLEEVE POSITION Overflow valve 1/min: 600 Speed : 1 417 413 000 Cont.-rod travelmm: 15.60...16.40 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.00 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 1100 Speed Del.quantity cm3/: 111.5...112.5 1000H.: (109.5...114.5) Opening pressure, bar : 172...175 cm3/:3.00Dispersion 1000H.: (6.00) Test inj. tubing : 1 680 750 014 HIGHEST RATED SPEED Outside diameter Setting point: x Wall thickness Speed 1/min : 600 : 6.00X2.00X600 Contr.-rod trav.mm: 16.0 x Length mm (A) Injection pump setting values Testing: Insp. values in parentheses Set constant delivery quant. 1st c-rod trav.mm : 10.00 Speed 1/min: 1145...1160 2nd c-rod trav.mm: 4.00 per values \_\_\_\_\_ 1/min : 1185...1215 Speed START OF DELIVERY LOWEST RATED SPEED I Test pressure, bar: 25...27 Setting point w/out aux. spring Speed 1/min : 250 Prestroke mm : 1.50...1.60 : (1.45...1.65) Contr.-rod trav.mm: 6.0 Contr.-rod trav.mm: 9.00...12.00 D09

Testing: 1/min : 100 Speed C-rod trav.mm min : 7.50 Speed 1/min : 250 C-rod trav.mm : 5.90...6.10 C-rod trav.mm : 2.00 1/min : 360...400 1/min : 500 Speed Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Dimension a mm : 0.35 Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 11.00...11.10 2nd speed 1/min: 500 C-rod trav.mm : 11.70...11.80 3rd speed 1/min : 750 C-rod trav.mm : 11.60...11.80 4th speed 1/min : 930 C-rod trav.mm : 11.10...11.30 FUEL-DELIVERY CHARACTERISTICS 1/min : 500 Speed Del.quantity cm3/: 107.5...111.5 1000H.: (105.5...113.5) Speed 1/min: 750 Del.quantity cm3/: 106.5...110.5 1000H.: (104.5...112.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : MAN 9,2 0 3 : 12.09.86 Edition SD mark cyl. no. : 5 Superceeded : 9.83 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 845 072 1/mi: 1100 1st speed Injection pump Contr.-rod trav.mm: 11.00...11.10 Pump designation : PES5A95D410LS2543 EP type number : 0 410 895 978 Del.quantity cm3/: 11.0...11.2 Governor Governor design. : RQV250...1100AB1177-100H.: (10.8...11.4) Governer no. : 0 420 212 163 cm3/:0.3Dispersion Customer-spec. information 100H.: (0.6) Customer : MAN 1/min: 250.0 2nd speed Engine : D2565 M/MF Contr.-rod trav. m: 6.4...6.6 Del.quantity cm3/: 0.8...1.4 100H.: (0.5...1.6) Dispersion cm3/: 0.3 100H.: (0.5) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38 . . . 42 (B) Setting of injection pump with externally-mounted governor Overflow valve : 1 417 413 000 SLEEVE TRAVELS 1st speed 1/min: 150 Inlet press., bar : 1.00 Sleeve travel mm: 0.40...0.70 2nd speed 1/min: 550
Sleeve travel mm: 3.60...4.00
3rd speed 1/min: 900
Sleeve travel mm: 5.60...6.10 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 4th speed 1/min: 1200 Sleeve travel mm: 9.50...10.30 Test inj. tubing : 1 680 750 003 SLEEVE POSITION Control-lever position
Degree: -1
Speed 1/min: 1140
Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version per values \_\_\_\_ 1/min: 1100 Speed Del.quantity cm3/: 110.5...112.5 1000H:: (108.5...114.5) cm3/: 3.50 1000H:: (6.00) START OF DELIVERY Test pressure, bar: 25...27 Dispersion Prestroke mm : 1.50...1.60 : (1.45...1.65) HIGHEST RATED SPEED Contr.-rod trav.mm: 9.00...12.00 1st version Cam sequence : 1- 3- 5- 4-Control-lever position degrees: 41...49

```
Testing:
1st c-rod trav.mm : 10.00
Speed 1/min: 1140...1150
2nd c-rod trav.mm: 4.00
           1/min: 1180...1210
  Speed
            1/min : 1300
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 8.00
Speed
           1/min : 250
C-rod trav.mm
                : 6.40...6.60
                  : 2.00
C-rod trav.mm
            1/min: 335...395
Speed
TORQUE CONTROL
Dimension a mm
                 : 0.35
Torque-control curve - 1st version
           1/min : 1100
1st speed
  C-rod trav.mm : 11.00...11.10
            1/min : 500
2nd speed
  C-rod trav.mm : 11.40...11.50
4th speed 1/min: 900
  C-rod trav.mm : 11.10...11.40
SWITCH-OVER POINT
Speed
            1/min: 170 (190)
FUEL-DELIVERY CHARACTERISTICS
Speed
            1/min : 500
Del.quantity cm3/: 0.0...111.5
            1000H.: (0.0...113.5)
1/min : 750
Speed
Del.quantity cm3/: 106.5...110.5
1000H.: (104.5...112.5)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 5- 4- 2 Note inst. in remarks column Test sheet : MAN 9,2 0 1 : 12.09.86 : 7.84 SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) Edition Superceeded Calibrating oil : ISO-4113 SD mark cyl. no. : 5 Combination no. : 0 400 845 073 BASIC SETTING Injection pump Pump designation : PES5A95D410LS2543Z 1st speed 1/mi: 1100 EP type number : 0 410 895 977 Governor Contr.-rod trav.mm: 9.90...10.00 Governor design. : RQV250...1100AB1177-Del.quantity cm3/: 9.1...9.3 1L Governer no. : 0 420 212 163 100H.: (8.9...9.5) Customer-spec. information Customer Dispersion cm3/:0.3Engine : D2565 M/MF 100H.: (0.6) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 7.2...7.4 Del.quantity cm3/: 1.5...2.1 100H.: (1.2...2.3) Dispersion cm3/: 0.3 100H.: (0.5) 1st version kW : 124.0 1/min: 2200 Speed TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 (B) Setting of injection pump with Overflow valve externally-mounted governor : 1 417 413 000 SLEEVE TRAVELS 1st speed 1/min: 150 Sleeve travel mm: 0.40...0.70 Inlet press., bar: 1.00 2nd speed 1/min: 550 Sleeve travel mm: 3.60...4.00 Calibrating nozzle-holder : 0 681 343 009 assembly 3rd speed 1/min: 950 Opening Sleeve travel mm: 6.00...6.50 pressure, bar : 172...175 4th speed 1/min: 1075 Sleeve travel mm: 9.00...9.70 SLEEVE POSITION Test inj. tubing : 1 680 750 003 Control-lever position Degree: -1 1/min: 1140 Outside diameter x Wall thickness : 6.00x2.00x600 Cont.-rod travelmm: 15.20...17.80 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Speed 1/min: 1100
Del.quantity cm3/: 91.5...93.5
1000H.: (89.5...95.5)
Dispersion cm3/: 3.50
1000H.: (6.00) per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 1.50...1.60 : (1.45...1.65) HIGHEST RATED SPEED

D13

1st version Control-lever position degrees: 41...49 Testing: 1st c-rod trav.mm: 8.90 1/min : 1140...1150 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1175...1205 th speed 1/min: 1300 C-rod trav.mm: 0.00...1.00 4th speed LOWEST RATED SPEED I Control-lever pesition degrees: 11...19 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.70 Speed 1/min: 250 C-rod trav.mm : 7.20...7.40 C-rod trav.mm : 2.00 1/min: 345...405 Speed TORQUE CONTROL Dimension a mm : 0.85 Torque-control curve - 1st version 1st speed 1/min: 1100 C-rod trav.mm : 9.90...10.00 2nd speed 1/min : 500 C-rod trav.mm : 10.70...10.80 3rd speed 1/min: 820 C-rod trav.mm : 10.40...10.60 4th speed 1/min: 955 C-rod trav.mm : 10.00...10.30 SWITCH-OVER POINT 1/min: 170 (190) Speed FUEL-DELIVERY CHARACTERISTICS 1/min : 700 Speed Del.quantity cm3/: 86.5...90.5 1000H: (84.5...92.5) Speed 1/min: 500 Del.quantity cm3/: 0.0...88.5 1000H.: (0.0...90.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                             : 1-5-3-6-2-4
                                                         Cam sequence
Note inst. in remarks column
                                                         SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0 : 0.50 (0.75)
Test sheet
                   : MB 5,7 N 11
                    : 12.09.86
Edition
Superceeded
                    : 8.85
Calibrating oil : ISO-4113
                                                         BASIC SETTING
Combination no.
                     : 0 400 846 336
                                                         1st speed
                                                                         1/mi: 1400
Injection pump
                                                         Contr.-rod trav.mm: 10.90...11.00
Pump designation : PES6A90D410RS2293W
EP type number
                   : 0 410 896 049
                                                         Del.quantity cm3/: 7.1...7.2
Governor
Governor design. : RQV300...1425AB740L
Governer no. : 0 420 212 037
                                                                        100H.: (6.9...7.4)
                                                                        cm3/:0.3
                                                         Dispersion
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                        100H.: (0.4)
Engine
                     : 0M352
                                                         2nd speed
                                                                        1/min: 300.0
                                                         Contr.-rod trav. m: 7.5...7.7
                                                        Del.quantity cm3/: 0.9...1.5
100H:: (0.7...1.7)
Dispersion cm3/: 0.2
100H:: (0.4)
1st version kW : 115.0
Speed
               1/min: 2850
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                         (B) Setting of injection pump with
                     : 38...42
                                                             externally-mounted governor
Overflow valve
                                                         SLEEVE TRAVELS
                     : 1 417 413 000
                                                         1st speed 1/min: 1460
                                                        Sleeve travel mm: 8.40...8.60
2nd speed 1/min: 950
Sleeve travel mm: 5.20...5.50
3rd speed 1/min: 775
Inlet press., bar : 1.00
Calibrating nozzle-holder
                 : 0 681 343 009
                                                           Sleeve travel mm: 4.10...4.60
 assembly
                                                                      1/min: 550
                                                         4th speed
Opening
                                                           Sleeve travel mm: 2.70...3.00
 pressure, bar : 172...175
                                                         5th speed 1/min: 300
                                                           Sleeve travel mm: 0.70...2.20
                                                        SLEEVE POSITION
Test inj. tubing : 1 680 750 014
                                                        Control-lever position
                                                                      Degree: -1
Outside diameter
                                                                       17min: 1420
x Wall thickness
                                                        Speed
                    : 6.00x2.00x600
x Length mm
                                                        Cont.-rod travelmm: 15.20...17.80
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        1st version
                                                        Speed 1/min: 1400
Del.quantity cm3/: 71.5...72.5
1000H.: (69.5...74.5)
Dispersion cm3/: 3.00
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
                                                                      1000H.: (4.50)
Prestroke mm
                     : 2.15...2.25
                                                        HIGHEST RATED SPEED
                    : (2.10...2.30)
Contr.-rod trav.mm: 9.00...12.00
                                                        1st version
D15
```

Control-lever position degrees: 55...63 Testing: 1st c-rod trav.mm : 9.90 Speed 1/min: 1455...1465 2nd c-rod trav.mm: 4.00 Speed 1/min: 1560...1590 4th speed 1/min: 1700 C-rod trav.mm : 0...1.0 LOWEST RATED SPEED I Control-lever position degrees: 10...18 Testing: 1/min : 100 Speed C-rod trav.mm min: 9.10 Speed 1/min: 300 7,5...7,7 C-rod trav.mm CONSTANT REGULATION 1/min : 370...520 Speed SWITCH-OVER POINT 1/min : 220 (240) Speed

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : MAN 9,7 P 1
                   : 12.09.86
Edition
Superceeded
                   : 10.85
Calibrating oil
                  : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no. : 0 400 846 449
                                                       BASIC SETTING
Injection pump
                                                                      1/mi: 1050
                                                       1st speed
Pump designation : PES6A95D420LS2595
EP type number
                    : 0 410 896 930
                                                       Contr.-rod trav.mm: 10.60...10.70
Governor
Governor design. : RQ200/1050AB1094
Governer no. : 0 420 201 623
                                                       Del.quantity cm3/: 10.2...10.4
                                                                     100H.: (10.0...10.6)
Customer-spec. information
Customer
                                                                     cm3/:0.3
                   : RABA
                                                       Dispersion
Engine
                   : D2156 HM6U
                                                                     100H.: (0.6)
1st version kW : 141.0
                                                                     1/min: 200.0
                                                       2nd speed
                                                      Contr.-rod trav. m: 6.9...7.1
Del.quantity cm3/: 1.1...1.5
100H.: (0.8...1.7)
Dispersion cm3/: 0.3
Speed
              1/min: 2100
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                                     100H.: (0.5)
                    : 38...42
                                                       SLEEVE POSITION
Overflow valve
                                                       Control-lever position
                    : 1 417 413 000
                                                                    Degree: -2
                                                                     17min: 500
                                                       Speed
                                                       Cont.-rod travelmm: 19.20...20.80
Inlet press., bar : 1.00
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                 : 0 681 343 009
 assembly
                                                       1st version
                                                                     1/min: 1050
Opening
                                                       Speed
                                                      Del.quantity cm3/: 102.0...104.0
1000H.: (100.0...106.0)
 pressure, bar : 172...175
                                                      Dispersion cm3/ : 3.50
Test inj. tubing : 1 680 750 014
                                                                    1000H.: (6.00)
Outside diameter
                                                      HIGHEST RATED SPEED
x Wall thickness
x Length mm : 6.00x2.00x600
                                                       Setting point:
                                                       Speed 1/min: 500
(A) Injection pump setting values
                                                      Contr.-rod trav.mm: 20.0
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
    per values ____
                                                      1st c-rod trav.mm : 9.60
                                                      Speed 1/min: 1095...1110
2nd c-rod trav.mm: 4.00
START OF DELIVERY
                                                                   1/min : 1125...1155
1/min : 1225
v.mm : 0...1.00
Test pressure, bar: 25...27
                                                        Speed
                                                      4th speed
                    : 2.00...2.10
Prestroke mm
                                                        C-rod tray mm
                    : (1.95...2.05)
Contr.-rod trav.mm: 9.00...12.00
                                                      LOWEST RATED SPEED I
D17
```

Setting point w/out aux. spring 1/min : 200 Contr.-rod trav.mm: 6.0 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.50 1/min : 200 Speed C-rod trav.mm : 5.90...6.10 C-rod trav.mm : 2.00 1/min : 270...310 1/min : 350 Speed Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1050 C-rod trav.mm: 10.60...10.70 2nd speed 1/min: 500 C-rod trav.mm : 11.10...11.30 3rd speed 1/min: 740 C-rod trav.mm : 11.10...11.30 4th speed 1/min: 800 C-rod trav.mm : 10.90...11.10 SWITCH-OVER POINT Speed 1/min : 140 (160) FUEL-DELIVERY CHARACTERISTICS 1/min : 500 Speed Del.quantity cm3/: 0.0...91.5 1000H.: (0.0...93.5) 1/min : 800 Speed Del.quantity cm3/: 101.5...104.5 1000H.: (99.5...106.5)

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0 : 0.50 (0.75)
                     : MB 5.7 x 1
                     : 12.09.86
Edition
Superceeded
                    : 12.84
                    : ISO-4113
Calibrating oil
                                                        BASIC SETTING
                    : 0 400 846 474
Combination no.
                                                        1st speed
                                                                        1/mi: 1375
                                                        Contr.-rod trav.mm: 11.30...11.40
Injection pump
Pump designation
                     : PES6A90D410RS2293
                                                        Del.quantity cm3/ : 7.5...7.6
EP type number
                     : 0 410 896 031
Governor
Governor design. : RQV300...1400AB1138L
Governor no. : 0 420 212 146
                                                                       100H.: (7.3...7.8)
                                                                       cm3/:0.3
                                                        Dispersion
Customer-spec. information
                     : DAIMLER-BENZ
                                                                       100H.: (0.4)
Customer
Engine
                     : OM 352A
                                                                       1/min: 300.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 7.6...7.8
                                                        Del.quantity cm3/: 0.9...1.5
100H.: (0.7...1.7)
1st version kW : 123.6
               1/min: 2800
Speed
                                                                       cm3/: 0.2
100H.: (0.4)
                                                        Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                         (B) Setting of injection pump with
                     : 38...42
                                                             externally-mounted governor
Overflow valve
                                                        SLEEVE TRAVELS
                     : 1 417 413 000
                                                        1st speed 1/min: 1460
                                                          Sleeve travel mm: 8.40...8.60
                                                        2nd speed 1/min: 950
Sleeve travel mm: 5.20...5.50
3rd speed 1/min: 775
Sleeve travel mm: 4.10...4.60
Inlet press., bar : 1.00
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                                      1/min: 550
                                                        4th speed
                                                          Sleeve travel mm: 2.70...3.00
Opening
 pressure, bar : 172...175
                                                        5th speed 1/min: 300
                                                          Sleeve travel mm: 0.70...1.20
Test inj. tubing : 1 680 750 014
                                                        SLEEVE POSITION
                                                        Control-lever position
                                                                      Degree: -1
1/min: 1420
Outside diameter
x Wall thickness
                                                        Speed
                  : 6.00x2.00x600
                                                        Cont.-rod travelmm: 16.00...19.40
x Length mm
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        1st version
                                                        Speed 1/min: 1375
Charge press. hPa: 700
Del.quantity cm3/: 75.0...76.0
1000H:: (73.0...78.0)
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
                                                                      cm3/ : 3.00
                                                        Dispersion
                                                                      1000H.: (4.50)
Prestroke mm
                     : 2.15...2.25
                     : (2.10...2.30)
Contr.-rod trav.mm: 9.00...12.00
                                                        HIGHEST RATED SPEED
D19
```

```
1st version
Control-lever
 position degrees: 57...63
Testing:
1st c-rod trav.mm : 10.30
          1/min : 1435...1445
  Speed
2nd c-rod trav.mm: 4.00
  Speed
            1/min : 1550...1580
4th speed
            1/min : 1650
  C-rod trav.mm : 0...1.0
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 9.20
Speed 1/min: 300
C-rod tray.mm
                : 7,6...7,8
CONSTANT REGULATION
            1/min : 350...475
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 1375
Speed
            hPa : 700
Pressure
Contr.-rod trav.mm: 11.30...11.40
Measurement
            1/min : 1375
Speed
1st pressure hPa : -
  C-rod trav.mm : 11.00...11.10
2nd pressure hPa : 280
  C-rod trav.mm
                  : 11.10...11.20
SWITCH-OVER POINT
            1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : -
            1/min : 500
Del.quantity cm3/: 56.0...58.0
            1000H.: (54.0...60.0)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 1.50...1.60 : (1.45...1.65) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 5- 3- 6-2-Test sheet : MAN 11,1P21 : 12.09.86 Edition Superceeded : 10.85 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 400 846 502 SD mark cyl. no. : 6 Injection pump Pump designation : PES6A95D410LS2542 BASIC SETTING EP type number : 0 410 896 936 Governor 1st speed 1/mi: 1100 Governor design. : RQ250/1100AB1137-2L Governer no. : 0 420 200 084 Contr.-rod trav.mm: 12.00...12.10 Customer-spec. information Del.quantity cm3/: 12.4...12.6 Customer : MAN 100H.: (12.2...12.8) Engine : D2566 M/MF Dispersion cm3/:0.31st version kW : 177.0 1/min: 1500 Speed 100H.; (0.6) 2nd version kW : 168.0 Speed 1/min: 1500 2nd speed 1/min: 250.0 Contr.-rod trav. m: 5.9...6.1 TEST BENCH REQUIREMENTS Del.quantity cm3/: 0.8...1.4 100H.: (0.5...1.6) Calibrating-oil inlet temp. OC Dispersion cm3/:0.3: 38...42 100H.: (0.5) Overflow valve SLEEVE POSITION : 1 417 413 000 Control-lever position Degree: -1 1/min: 600 Inlet press., bar : 1.00 Speed Cont.-rod travelmm: 15.60...16.40 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening 1st version Speed 1/min: 1100
Del.quantity cm3/: 124.5...126.5
1000H.: (122.5...128.5)
Dispersion cm3/: 3.00
1000H.: (6.00) pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 Outside diameter 2nd version x Wall thickness Speed 1/min: 1100 : 6.00x2.00x600 x Length mm Del.quantity cm3/: 118.0...120.0 1000H.: (116.0...122.0) cm3/ : 3.00 1000H.: (6.00) (A) Injection pump seting values Insp. values in parentheses Set constant delivery quant. Dispersion per values \_\_\_\_ HIGHEST RATED SPEED START OF DELIVERY Setting point: Test pressure, bar: 25...27 1/min : 600 Speed Contra-rod trav.mm: 16.0

```
Testing:
1st c-rod trav.mm : 11.00
            1/min: 1145...1160
  Speed
2nd c-rod trav.mm : 4.00
           1/min : 1195...1225
  Speed
Setting point:
Speed
             1/min : 600
Contr.-rod trav.mm: 16.0
Testing:
1st c-rod trav.mm: 11.0
          1/min : 1145...1160
  Speed
2nd c-rod trav.mm: 4.0
            1/min: 1195...1225
  Speed
LOWEST RATED SPEED I
Setting point w/out aux. spring
           1/min : 250
Centr.-rod trav.mm: 6.1
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 7.50
            1/min : 250
Speed
C-rod trav.mm
               : 6.00...6.20
C-rod trav.mm
                  : 2.00
            1/min: 360...400
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1100
  C-rod trav.mm : 12.00...12.10
2nd speed 1/min: 500
  C-rod trav.mm : 12.00...12.20
Torque-control curve - 2nd version
1st speed 1/min: -
  C-rod trav.mm
2nd speed 1/min: -
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 500
Del.quantity cm3/: 107.5...113.5
1000H: (105.5...115.5)
Speed 1/min: 750
Del.quantity cm3/: 110.5...113.5
             1000H.: (108.0...116.0)
             1/min : 500
Speed
Del.quantity cm3/: 102.0...108.0
            1000H.: (100.0...110.0)
1/min: 750
Speed
Del.quantity cm3/: 106.0...109.0
1000H.: (104.0...111.0)
```

: MAN-NR.2-7409-VERS.1
APPLICATION : \*-VERSION 2

\*Tropics version

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
Test sheet
Edition
Superceeded
                   : RAB 9,7 B
: 14.11.86
                   : 10.85
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                   : 0 400 846 514
                                                      BASIC SETTING
Injection pump
                                                      1st speed
                                                                      1/mi: 1100
Pump designation : PES6A95D420LS2595
EP type number
                    : 0 410 896 930
                                                      Contr.-rod trav.mm: 11.30...11.40
Governor
Governor design.
                    : RQ200/1100AB1094-1R
                                                      Del.quantity cm3/ : 11.4...11.6
Governer no.
                    : 0 420 201 637
                                                                     100H.: (11.2...11.8)
Customer-spec. information
Customer
                   : RABA
                                                      Dispersion
                                                                    cm3/:0.3
                    : D2356HM6U
Engine
                                                                     100H.: (0.6)
1st version kW : 162.0
                                                      2nd speed
                                                                     1/min: 200.0
Speed
              1/min: 2200
                                                      Contr.-rod trav. m: 6.6...6.8
                                                      Del.quantity cm3/: 0.8...1.4
100H.: (0.5...1.6)
TEST BENCH REQUIREMENTS
                                                                    cm3/: 0.3
100H.: (0.5)
                                                      Dispersion
Calibrating-oil inlet temp. "C
                    : 38 ... 42
                                                      SLEEVE POSITION
Overflow valve
                                                      Control-lever position
                    : 1 417 413 000
                                                                   Degree: -2
17min: 550
                                                      Speed
Inlet press., bar : 1.00
                                                      Cont.-rod travelmm: 19.20...20.80
Calibrating nozzle-holder
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 0 681 343 009
 assembly
                                                      1st version
Opening
                                                      Speed 1/min: 1100
Del.quantity cm3/: 114.0...116.0
 pressure, bar : 172...175
                                                                   1000H.: (112.0...118.0)
cm3/: 3.00
                                                      Dispersion
                                                                   1000H.: (6.00)
Test inj. tubing
                   : 1 680 750 014
Outside diameter
                                                      HIGHEST RATED SPEED
x Wall thickness
                : 6.00x2.00x600
x Length mm
                                                      Setting point:
                                                      Speed 1/min : 550
                                                      Contr.-rod trav.mm: 20.0
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
    per values
                                                      1st c-rod trav.mm : 10.30
                                                      Speed 1/min: 1145...1160
2nd c-rod trav.mm: 4.00
Speed 1/min: 1175...1205
START OF DELIVERY
Test pressure, bar: 25...27
                    : 2.00...2.10
Prestroke mm
                                                      LOWEST RATED SPEED I
                    : (1.95...2.05)
                                                      Setting point w/out aux. spring
Contr.-rod trav.mm: 9.00...12.00
                                                      Speed
                                                                   1/min : 200
D23
```

Contra-rod trayamm: 6.5 Testing: Speed 1/min: 100 C-rod trav.mm min: 8.00 1/min : 200 Speed C-rod trav.mm : 6.40...6.60 mm : 2.00 1/min : 290...330 1/min : 400 C-rod trav.mm Speed Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 11.30...11.40 2nd speed 1/min: 500 C-rod trav.mm : 11.90...12.00 3rd speed 1/min : 750 C-rod trav.mm : 11.80...12.00 4th speed 1/min : 800 C-rod trav.mm : 11.60...11.90 SWITCH-OVER POINT 1/min: 140 (160) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 500
Del.quantity cm3/: 0.0...110.0
1000H.: (0.0...112.5)
Speed 1/min: 800 Del.quantity cm3/: 112.0...118.0 1000H.: (109.5...120.5) Remarks: **APPLICATION** 

**Omnibus** 

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam seguence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                    : LIE 8,4 B
                                                         SD ang. spacing CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
                    : 12.09.86
                    : 4.86
Calibrating oil : ISO-4113
                                                         START OF DELIVERY DIFFERENCE
                                                         betw.c-rod trav.mm: 9.00...12.00
Difference CS : 4.00...5.00
Combination no.
                    : 0 400 846 536
Injection pump
Pump designation : PES6A100D410RS2687
                                                         BASIC SETTING
EP type number : 0 410 806 001
Governor
                                                                         1/mi: 1000
                                                         1st speed
Governor design. : RQV400...1000AB1203L
Governer no. : 0 420 212 177
                                                         Contra-rod trav.mm: 11.40...11.50
                                                         Del.quantity cm3/: 10.5...10.7
Customer-spec. information
Customer
                    : LIEBHERR
                                                                        100H.: (10.3...10.9)
Engine
                     : D906T
                                                         Dispersion
                                                                        cm3/:0.3
1st version kW : 132.0
              1/min: 2000
Speed
                                                                        100H.: (0.6)
TEST BENCH REQUIREMENTS
                                                         2nd speed
                                                                        1/min: 400.0
                                                         Contr.-rod trav. m: 6.9...7.1
Del.quantity cm3/: 1.0...1.6
100H.: (0.7...1.8)
Dispersion cm3/: 0.3
100H.: (0.5)
Calibrating-oil inlet temp. °C
                     : 40...45
Overflow valve
                     : 1 417 413 000
                                                          (B) Setting of injection pump with
                                                              externally-mounted governor
Inlet press., bar: 1.50
                                                         SLEEVE TRAVELS
Calibrating nozzle-holder
               : 0 681 343 009
                                                         1st speed 1/min: 375
Sleeve travel mm: 1.00...1.10
 assembly
                                                                       1/min: 600
Opening.
                                                         2nd speed
 pressure, bar : 172...175
                                                           Sleeve travel mm: 3.70...4.00
                                                         3rd speed 1/min: 1000
Sleeve travel mm: 7.50...7.60
4th speed 1/min: 1150
Sleeve travel mm: 9.50...10.20
Test inj. tubing : 1 680 750 008
Outside diameter
x Wall thickness
                                                         SLEEVE POSITION
                   : 6.00x2.00x600
                                                         Control-lever position
x Length mm
                                                                       Degree: 1
1/min: 1070
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                         Cont.-rod travelmm: 15.20...17.80
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
START OF DELIVERY
                                                         1st version
Test pressure, bar: 25...27
                                                         Speed
                                                                        1/min: 1000
                                                         Charge press. hPa: 700
                                                         Del.quantity cm3/: 105.0...107.0
1000H.: (103.0...109.0)
                     : 2.70...2.80
Prestroke mm
                     : (2.65. . . 2.85)
Contr.-rod trav.mm: 9.00...12.00
D25
```

Dispersion cm3/: 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 58...66 Testing: 1st c-rod trav.mm : 10.30 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 Speed 1/min: 1105...1135 th speed 1/min: 1250 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 10...18 Testing: Speed 1/min: 100 C-rod trav.mm min: 8.40 Speed 1/min: 400 C-rod trav.mm : 6.90...7.10 CONSTANT REGULATION 1/min: 420...530 Speed TORQUE CONTROL Dimension a mm : 1.40 Torque-control curve - 1st version 1st speed 1/min : 1000 C-rod trav.mm : 11.40...11.50 2nd speed 1/min: 500 C-rod trav.mm : 12.80...12.90 4th speed 1/min : 900 C-rod trav.mm : 11.80...12.00 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.80...12.90 Measurement 1/min : 500 Speed 1st pressure hPa : -: 11.30...11.40 C-rod trav.mm 2nd pressure hPa : 400 3rd pressure hPa : 370 C-rod tray ---SWITCH-OVER POINT 1/min : 320 (340) Speed

D26

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : DAF 6,2 P 1 : 28.10.86 : 4.86 Calibrating oil : ISO-4113

Combination no. : 0 400 846 537

Injection pump Pump designation : PES6A95D32ORS2693Z EP type number : 0 410 896 913

Governor

Governor design. : RQ300/1300AB1204R Governer no. : 0 420 201 640

Customer-spec. information Customer : DAF

: DNS 620 Engine

1st version kW : 150.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. DC : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00X1.50X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2,00...2.10 Prestroke mm : (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1-5-3-6-2-4 Speed 1/min : 1345...1360 2nd c-rod trav.mm : 4.00 1/min : 1425...1455 1/min : 1550 Speed 4th speed \$D ang. spacing  $^{\circ}$  CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring SD mark cyl. no. : 1 Speed 1/min : 300 START OF DELIVERY DIFFERENCE Contr.-rod trav.mm: 6.4 betw.c-rod trav.mm: 8.50...9.50 & c-rod trav max.: 21.0 Difference CS: 2.50...3.50 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.30 Speed 1/min: 300 C-rod trav.mm : 6.30...6.50 BASIC SETTING C-rod trav.mm : 2.00 1/min : 525...565 1/mi: 850 Speed 1st speed Contr.~rod trav.mm: 12.20...12.30 TORQUE CONTROL Dimension a mm : 0.57 Del.quantity cm3/ : 8.7...8.9 Torque-control curve - 1st version 1st speed 1/min : 1290 100H.: (8.5...9.1) C-rod trav.mm : 11.70...11.90 1/min : 850 2nd speed cm3/:0.3Dispersion C-rod trav.mm : 13.20...13.30 3rd speed 1/min: 965 100H.: (0.6) C-rod trav.mm : 12.70...12.80 4th speed 1/min: 1060 C-rod trav.mm : 12.20...12.40 1/min: 300.0 2nd speed Contr.-rod trav. m: 6.3...6.5 Del.quantity cm3/: 0.7...1.1 100H.: (0.4...1.3) compensator (LDA, ADA, ALDA) cm3/:0.3Dispersion 100H.: (0.5) 1st version Setting SLEEVE POSITION 1/min : 600 Speed Control-lever position hPa : 700 Pressure Degree: -2 1/min: 820 Contr.-rod trav.mm: 12.20...12.30 Cont.-rod travelmm: 19.20...20.80 Measurement 1/min : 600 Speed FULL-LOAD DELIV. AT FULL-LOAD STOP 1st pressure hPa : -1st version C-rod trav.mm : 11.20...11.40 2nd pressure hPa : 290 1/min: 850 Speed Charge press. hPa: 700
Del.quantity cm3/: 87.0...89.0
1000H: (85.0...91.0)
Dispersion cm3/: 3.50 C-rod trav.mm : 12.00...12.10
3rd pressure hPa : 250 : 11.50...11.70 C-rod trav.mm 1000H.: (6.00) SWITCH-OVER POINT 1/min : 220 (240) Speed HIGHEST RATED SPEED FUEL-DELIVERY CHARACTERISTICS Setting point: Speed 1/min: 820 1st version Charge press. hPa: 700 Speed 1/min: 1290 Del.quantity cm3/: 86.0...88.0 Contr.-rod trav.mm: 20.0 Testing: 1000H.: (83.5...90.5) 1st c-rod trav.mm : 10.70 D28

	<u>N</u>
	II K
	 N
	Į.
	v
	ų h
	u b
	ß
	N 6
	" !!
i	
	i I
	I
	l .
	<b>,</b>
	<b> </b>
	j
	ļ Į
J15	
	ĺ

Charge press. hPa: Speed 1/min: 600
Del.quantity cm3/: 65.0...67.0
1000H.: (63.0...69.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6,2 P 2 Edition : 12.09.86

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 400 846 538

Injection pump

Pump designation : PES6A95D32ORS2693

EP type number : 0 410 896 914

Governor

Governor design. : RQ300/1300AB1204R Governer no. : 0 420 201 640

Customer-spec. information Customer

Engine : DNT 620

1st version kW : 130.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. DC : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00X1.50X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10

: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1-5-3-6-2-4	Speed 1/min: 13501365 2nd c-rod trav.mm: 4.00 Speed 1/min: 14201450
SD ang. spacing CS: 0-60-120-180-240-300   Tolerance + - : 0.50 (0.75)	4th speed 1/min : 1550 C-rod trav.mm : 01.0
SD mark cyl. no. : 1	LOWEST RATED SPEED I Setting point w/out aux. spring
START OF DELIVERY DIFFERENCE	Speed 1/min: 300 Contrred trav.mm: 6.4
betw.c-rod trav.mm: 8.509.50 & c-rod trav max. : 21.0 Difference CS : 2.503.50	Testing: Speed 1/min: 100 C-rod trav.mm min: 7.30 Speed 1/min: 300
BASIC SETTING	C-rod trav.mm : 6.306.50 C-rod trav.mm : 2.00
1st speed	Speed 1/min: 525565
Contrrod trav.mm: 11.5011.60	TORQUE CONTROL Dimension a mm : 0.57
Del.quantity cm3/: 7.67.8	Torque-control curve - 1st version 1st speed 1/min : 1290
100H.: (7.48.0)	C-rod trav.mm : 10.7010.80 2nd speed  1/min : 850
Dispersion cm3/: 0.3	C-rod trav.mm : 12.2012.30 3rd speed 1/min : 935
100H.: (0.6)	C-rod trav.mm : 11.8012.00 4th speed 1/min : 1080
2nd speed	C-rod trav.mm : 11.0011.30
Del.quantity cm3/: 0.71.1	compensator (LDA,ADA,ALDA)
100H.: (0.41.3)	
100H.: (0.41.3)   Dispersion cm3/: 0.3   100H.: (0.5)	
100H.: (0.41.3)  Dispersion cm3/: 0.3  100H.: (0.5)  SLEEVE POSITION  Control-lever position  Degree: 4547	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60
100H.: (0.41.3)  Dispersion cm3/: 0.3  100H.: (0.5)  SLEEVE POSITION Control-lever position	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60 Measurement
100H.: (0.41.3)  Dispersion cm3/: 0.3  100H.: (0.5)  SLEEVE POSITION  Control-lever position  Degree: 4547  Speed 1/min: 850	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60 Measurement Speed 1/min: 600
100H.: (0.41.3) Dispersion cm3/: 0.3 100H.: (0.5)  SLEEVE POSITION Control-lever position Degree: 4547 Speed 1/min: 850 Controd travelmm: 19.2020.80  FULL-LOAD DELIV. AT FULL-LOAD STOP	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: - C-rod trav.mm: 11.2011.40
100H.: (0.41.3) Dispersion cm3/: 0.3 100H.: (0.5)  SLEEVE POSITION Control-lever position Degree: 4547 Speed 1/min: 850 Controd travelmm: 19.2020.80  FULL-LOAD DELIV. AT FULL-LOAD STOP  1st version Speed 1/min: 850	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: - C-rod trav.mm: 11.2011.40 2nd pressure hPa: 250
100H.: (0.41.3) Dispersion cm3/: 0.3 100H.: (0.5)  SLEEVE POSITION Control-lever position Degree: 4547 Speed 1/min: 850 Controd travelmm: 19.2020.80  FULL-LOAD DELIV. AT FULL-LOAD STOP  1st version Speed 1/min: 850 Charge press. hPa: 700 Del. quantity cm3/: 76.078.0	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: -     C-rod trav.mm : 11.2011.40 2nd pressure hPa: 250     C-rod trav.mm : 11.4011.50
100H.: (0.41.3) Dispersion cm3/: 0.3 100H.: (0.5)  SLEEVE POSITION Control-lever position Degree: 4547 Speed 1/min: 850 Controd travelmm: 19.2020.80  FULL-LOAD DELIV. AT FULL-LOAD STOP  1st version Speed 1/min: 850 Charge press. hPa: 700 Del.quantity cm3/: 76.078.0 1000H.: (74.080.0) Dispersion cm3/: 3.50	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: -     C-rod trav.mm: 11.2011.40 2nd pressure hPa: 250     C-rod trav.mm: 11.4011.50  SWITCH-OVER POINT
100H.: (0.41.3)  Dispersion cm3/: 0.3	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: -     C-rod trav.mm : 11.2011.40 2nd pressure hPa: 250     C-rod trav.mm : 11.4011.50  SWITCH-OVER POINT Speed 1/min: 220 (240)
100H.: (0.41.3) Dispersion cm3/: 0.3 100H.: (0.5)  SLEEVE POSITION Control-lever position Degree: 4547 Speed 1/min: 850 Controd travelmm: 19.2020.80  FULL-LOAD DELIV. AT FULL-LOAD STOP  1st version Speed 1/min: 850 Charge press. hPa: 700 Del.quantity cm3/: 76.078.0 1000H.: (74.080.0) Dispersion cm3/: 3.50	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: -     C-rod trav.mm: 11.2011.40 2nd pressure hPa: 250     C-rod trav.mm: 11.4011.50  SWITCH-OVER POINT Speed 1/min: 220 (240)  FUEL-DELIVERY CHARACTERISTICS
100H.: (0.41.3)  Dispersion cm3/: 0.3	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: -     C-rod trav.mm: 11.2011.40 2nd pressure hPa: 250     C-rod trav.mm: 11.4011.50  SWITCH-OVER POINT Speed 1/min: 220 (240)  FUEL-DELIVERY CHARACTERISTICS  1st version Charge press. hPa: 700 Speed 1/min: 1290 Del.quantity cm3/: 72.074.0
100H.: (0.41.3)  Dispersion cm3/: 0.3	1st version Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 11.5011.60  Measurement Speed 1/min: 600  1st pressure hPa: -     C-rod trav.mm: 11.2011.40 2nd pressure hPa: 250     C-rod trav.mm: 11.4011.50  SWITCH-OVER POINT Speed 1/min: 220 (240)  FUEL-DELIVERY CHARACTERISTICS  1st version Charge press. hPa: 700 Speed 1/min: 1290

Del.quantity cm3/: 65.0...67.0 1000H.: (63.0...69.0) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 6.2 F Edition : 12.09.86 Superceeded : 10.85 Calibrating oil : ISO-4113 : DAF 6,2 P

Combination no. : 0 400 846 539

Injection pump

Pump designation : PES6A95D32ORS2693 EP type number : 0 410 896 914

Governor

Governor design. : RQ300/1300AB1205R

Governer no. : 0 420 201 642

Customer-spec. information Customer : DAF

Engine : DNTD 620

1st version kW : 110.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening |

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10

: (1.95...2.15)

Contr.-rod trav.mm: 7.50...10.50

Cam sequence : 1-5-3-6-2-4 SD ang. spacing  $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + -  $^{\circ}$ : 0.50 (0.75) SD mark cyl. no. : 1 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 & c-rod tray max. : 21.0 Difference CS : 2.50...3.50 BASIC SETTING 1st speed 1/mi: 850 Contr.-rod trav.mm: 10.80...10.90 Del.quantity cm3/ : 6.4...6.6 100H.: (6.2...6.8) Dispersion cm3/:0.3100H.: (0.6) 1/min: 300.0 2nd speed Contr.-rod trav. m: 6.1...6.3

Del.quantity cm3/: 0.7...1.0

100H.: (0.4...1.2)

Dispersion cm3/: 0.3 100H.: (0.5) SLEEVE POSITION Control-lever position Degree: -2 1/min: 850 Cont.-rod travelmm: 19.20...20.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 850 Speed Del.quantity cm3/: 64.0...66.0 1000H:: (62.0...68.0) Dispersion cm3/: 3.50 1000H.: (6.00) HIGHEST RATED SPEED Setting point: 1/min : 850 Speed Contra-rod trav.mm: 20.0 Testing: 1st c-rod trav.mm: 9.30 1/min: 1335...1350 Speed

E06

2nd c-rod trav.mm: 4.00
Speed 1/min: 1400...1430
4th speed 1/min: 1550
C-rod trav.mm: 0.00...1.00

LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed 1/min: 300
Contr.-rod trav.mm: 6.4

Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.30
Speed 1/min: 300

Speed 1/min: 300 C-rod trav.mm: 6.30...6.50 C-rod trav.mm: 2.00 Speed 1/min: 525...565

TORQUE CONTROL

Dimension a mm : 0.35
Torque-control curve - 1st version
1st speed 1/min : 850
C-rod trav.mm : 11.20...11.40
2nd speed 1/min : 1290
C-rod trav.mm : 10.30...10.40
3rd speed 1/min : 970

C-rod trav.mm : 10.90...11.10 4th speed 1/min : 1050 C-rod trav.mm : 10.40...10.60

SWITCH-OVER POINT Speed 1/min: 220 (240)

FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 1290 Del.quantity cm3/: 69.0...71.0 1000H.: (66.5...73.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                    : KHD 9,6 S
                                                      SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
                   : 12.09.86
                   : 1.86
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                   : 0 400 846 544
                                                                     1/mi: 1250
                                                      1st speed
                                                      Contr.-rod trav.mm: 10.00...10.10
Injection pump
Pump designation : PES6A95D41ORS2416
EP type number
                    : 0 410 896 961
                                                      Del.quantity cm3/: 9.9...10.1
Governor
Governor design. : RQV300...1250AB1211L
                                                                    100H.: (9.7...10.3)
Governer no.
                    : 0 420 212 184
                                                                    cm3/:0.3
                                                      Dispersion
Customer-spec. information
Customer
                                                                    100H.: (0.6)
                   : KHD
Engine
                    : F6L413FR
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.4...6.6
                                                      Del.quantity cm3/: 1.9...2.5
1st version kW : 123.0
                                                                    100H.: (1.6...2.7)
cm3/: 0.3
Speed
              1/min: 2500
                                                      Dispersion
                                                                    100H.: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oid inlet temp. OC
                                                      (B) Setting of injection pump with
                    : 38 ... 42
                                                          externally-mounted governor
Overflow valve
                                                      SLEEVE TRAVELS
                    : 1 417 413 000
                                                      1st speed 1/min: 250
                                                        Sleeve travel mm: 1.00...1.20
                                                      2nd speed 1/min: 500
Sleeve travel mm: 3.20...3.50
3rd speed 1/min: 1000
inlet press, bar : 1.00
Calibrating nozzle-holder
 assembly
                  : 0 681 343 009
                                                        Sleeve travel mm: 6.20...6.40
                                                      4th speed 1/min: 1250
Opening
                                                        Sleeve travel mm: 8.20...8.30
pressure, bar : 172...175
                                                      SLEEVE POSITION
                                                      Control-lever position
Test inj. tubing : 1 680 750 014
                                                                   Degree: -1
1/min: 1280
                                                      Speed
                                                      Cont.-rod travelmm: 15.20...17.80
Outside diameter
x Wall thickness
                  : 6.00x2.00x600
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
x Length mm
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                      Speed
                                                                    1/min: 1250
                                                      Del.quantity cm3/: 99.0...101.0
1000H:: (97.0...103.0)
Dispersion cm3/: 3.50
    per values ____
START OF DELIVERY
                                                                   1000H.: (6.00)
Test pressure, bar: 25...27
                                                      HIGHEST RATED SPEED
Prestroke mm
                    : 1.90...2.00
                                                      1st version
                    : (1.85...2.05)
                                                      Control-lever
Contr.-rod tray.mm: 9.00...12.00
                                                       position degrees: 46...54
E08
```

Testing: 1st c-rod trav.mm: 9.00 Speed 1/min : 1290...1300 2nd c-rod trav.mm: 4.50 1/min: 1350...1380 Speed 4th speed 1/min: 1500 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 14...22 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.00 Speed 1/min : 300 C-rod trav.mm : 6.40...6.60 CONSTANT REGULATION 1/min: 370...485 Speed TORQUE CONTROL Dimension a mm : 0.30 Torque-control curve - 1st version 1/min : 1250 1st speed C-rod trav.mm : 10.00...10.10 2nd speed 1/min: 600 C-rod trav.mm : 10.20...10.30 d speed 1/min : 715 3rd speed C-rod trav.mm : 10.10...10.30 4th speed 1/min : 765 C-rod trav.mm : 10.00...10.30 SWITCH-OVER POINT 1/min : 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS 1/min : 600 Speed Del.quantity cm3/: 91.5...94.5 1000H.: (89.0...97.0)

Remarks: APPLICATION

Special-purpose vehicle

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : KHD 6,1 M SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Edition : 12.09.86 Superceeded : 1.86 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 846 548 1/mi: 1250 1st speed Injection pump Pump designation : PE\$6A95D41OR\$2715 Contr.-rod trav.mm: 14.00...14.10 EP type number : 0 410 896 911 Governor Del.quantity cm3/: 9.4...9.6 Governor design. : RQV300...1250AB1158-100H.: (9.2...9.8) : 0 420 212 188 Governer no. cm3/:0.3Dispersion Customer-spec. information Customer 100H.: (0.6) Engine : BF6L913 2nd speed 1/min: 300.0 Contr.-rod trav. m: 4.9...5.1 Del.quantity cm3/: 1.0...1.6 1st version kW : 140.0 Speed 1/min: 2500 100H.: (0.7...1.8) cm3/:0.3Dispersion 100H.: (0.5) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C (B) Setting of injection pump with : 38...42 externally-mounted governor Overflow valve SLEEVE TRAVELS : 1 417 413 000 1st speed 1/min: 300 Sleeve travel mm: 0.80...0.90 Inlet press., bar : 1.00 2nd speed 1/min: 600 Sleeve travel mm: 3.60...3.90 3rd speed 1/min: 900
Sleeve travel mm: 5.20...5.40
4th speed 1/min: 1200
Sleeve travel mm: 7.80...7.90 Calibrating nozzle-holder : 0 681 343 009 assembly Opening. pressure, bar : 172...175 1/min: 1400 5th speed Sleeve travel mm: 10.00...10.40 Test inj. tubing : 1 680 750 014 SLEEVE POSITION Control-lever position Outside diameter Degree: -1 1/min: 1265 x Wall thickness Cont.-rod travelmm: 15.20...17.80 : 6.00x2.00x600 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version per values Speed 1/min: 1250 charge press. hPa: 700 Del.quantity cm3/: 94.5...96.5 1000H: (92.5...98.5) Dispersion cm3/: 3.50 START OF DELIVERY Test pressure, bar: 25...27 : 1.90...2.00 1000H.: (6.00) Prestroke mm : (1.85...2.05) E10

HIGHEST RATED SPEED 1st version Control-lever position degrees: 63...71 Testing: 1st c-rod trav.mm : 13.00 Speed 1/min: 1290...1300 2nd c-rod trav.mm : 4.00 1/min : 1390...1420 Speed 4th speed 1/min : 1550 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 5...13 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.50 Speed 1/min: 300 C-rod trav.mm: 4.90...5.10 C-rod trav.mm: 2.00 1/min : 360...420 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 14.00...14.10 2nd speed 1/min : 500 C-rod trav.mm : 14.00...14.20 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 14.90...14.10 **Measurement** Specd 1/min : 500 1st pressure hPa : -C-rod trav.mm : 10,20...10.30 2nd pressure hPa : 390 C-rod trav.mm : 13.10...13.20 3rd pressure hPa : 200 : 11.40...11.60 C-rod trav.mm SWITCH-OVER POINT 1/min : 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 700

Del.quantity cm3/: 92.5...95.5 1000H:: (90.0...98.0) Charge press. hPa: -Speed 1/min: 500 Del.quantity cm3/: 53.0...55.0 1000H:: (51.0...57.0)

Remarks:

Speed

1/min : 800

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 6,1 N Edition : 12.09.86

Superceeded

Calibrating oil : ISG-4113

Combination no. : 0 400 846 549

Injection pump

Pump designation : PES6A95D41ORS2471 EP type number : 0 410 896 952

Governor

Governor design. : RQV300...1250AB1089-

Governer no. : 0 420 212 190

Customer-spec. information Customer

Engine : BF6L913C

1st version kW : 141.0 1/min: 2500 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00X2.00X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00

: (1.85...2.05)

Contr.-rod trav.mm: 9.00...12.00 Control-lever Cam sequence : 1-5-3-6-2-4 position degrees: 69...77 Testing: 1st c-rod trav.mm : 10.60 Speed 1/min: 1290...1300 2nd c-rod trav.mm: 4.00 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) Speed 1/min: 1345...1375 4th speed 1/min: 1500 BASIC SETTING C-rod trav.mm : 0.00...1.00 ist speed 1/mi: 1250 LOWEST RATED SPEED I Contr.-rod trav.mm: 11.60...11.70 Control-lever position degrees: 14...22 Del.quantity cm3/: 10.1...10.3 Testing: 100H.: (9.9...10.5) 1/min : 100 Speed C-rod trav.mm min : 9.00 Dispersion cm3/:0.3Speed 1/min: 300 C-rod trav.mm : 7,50...7,70 100H.: (0.6) CONSTANT REGULATION 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.5...7.7 Del.quantity cm3/: 1.0...1.6 100H.: (0.7...1.8) 1/min : 350...485 Speed TORQUE CONTROL Dimension a mm :cm3/: 0.3 100H.: (0.5) Dispersion Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 11.60...11.70 2nd speed 1/min : 500 C-rod trav.mm : 11.60...11.80 (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS SWITCH-OVER POINT 1st speed 1/min: 300 1/min : 220 (240) Speed Sleeve travel mm: 1.30...1.40 2nd speed 1/min: 650 FUEL-DELIVERY CHARACTERISTICS Sleeve travel mm: 3.70...3.90 Speed 1/min: 850 Del.quantity cm3/: 94.5...97.5 1000H:: (92.0...100.0) 3rd speed 1/min: 1200 Sleeve travel mm: 6.90...7.10
4th speed 1/min: 1290
Sleeve travel mm: 8.40...8.50 SLEEVE POSITION Control-lever position Remarks: Degree: -1 17min: 1290 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1250 Speed Del.quantity cm3/: 101.0...103.0 1000H.: (99.0...105.0) cm3/ : 3.50 1000H.: (6.00) Dispersion

HIGHEST RATED SPEED

1st version

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Contr.-rod trav.mm: 9.00...12.09
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                   : FIA 5,9 B
                                                       SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
                     : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no.
                    : 0 400 846 5.1
                                                       BASIC SETTING
Injection pump
Pump designation : PES6A90D410RS2723
                                                                       1/mi: 1500
                                                       1st speed
EP type number
                    : 0 410 896 085
                                                       Contr.-rod trav.mm: 9.00...9.10
Governor
Governor design. : RQV300...1500AB1152-
                                                       Del.quantity cm3/: 4.7...4.8
                    : 0 420 212 195
Governer no.
                                                                      100H.: (4.5...5.0)
Customer-spec. information
Customer
                    : IVECO-FIAT
                                                       Dispersion
                                                                      cm3/:0.3
                    : 8060.05.661
Engine
                                                                      100H.: (0.4)
1st version kW : 81.0
                                                                      1/min: 300.0
                                                       2nd speed
Speed
              1/min: 3000
                                                       Contr.-rod trav. m: 8.2...8.4
                                                       Del.quantity cm3/: 1.0...1.6
100H:: (0.8...1.8)
Dispersion cm3/: 0.2
100H:: (0.4)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
                                                        (B) Setting of injection pump with
Overflow valve
                                                            externally-mounted governor
                    : 1 417 413 000
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 345
Sleeve travel mm: 2.20...2.40
2nd speed 1/min: 410
Sleeve travel mm: 2.80...3.20
Inlet press., bar: 1.00
Calibrating nozzle-holder
 assembly
           : 0 681 343 009
                                                       3rd speed 1/min: 630
                                                          Sleeve travel mm: 4.30...4.70
Opening
                                                       4th speed 1/min: 1545
 pressure, bar : 172...175
                                                          Sleeve travel mm: 8.60...8.70
                                                       5th speed 1/min: 1650
Sleeve travel mm: 9.30...9.50
Test inj. tubing : 1 680 750 014
Outside diameter
                                                       SLEEVE POSITION
x Wall thickness
                                                       Control-lever position
                    : 6.00x2.00x600
x Length mm
                                                                     Degree: -1
1/min: 1525
(A) Injection pump setting values
                                                       Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                       1st version
START OF DELIVERY
                                                                      1/min: 1500
                                                       Speed
                                                       Del.quantity cm3/: 47.5...48.5
1000H:: (45.5...50.5)
Dispersion cm3/: 3.00
Test pressure, bar: 25...27
                 : 2.20...2.30
Prestroke mm
                    : (2.15...2.35)
                                                                     1000H.: (4.50)
E15
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 57...65 Testing: 1st c-rod trav.mm: 8.00 Speed 1/min: 1540...1550
2nd c-rod trav.mm: 4.00
Speed 1/min: 1635...1665
4th speed 1/min: 1800
C-rod trav.mm: 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 15...23 Testing: 1/min: 100 Speed C-rod trav.mm min : 9.00 Speed 1/min : 300 C-rod trav.mm : 8.20...8.40 CONSTANT REGULATION 1/min: 330...430 Speed TORQUE CONTROL Dimension a mm : 1.30 Torque-control curve - 1st version 1st speed 1/min: 1500 C-rod trav.mm: 9.00...9.10 2nd speed 1/min: 500 C-rod trav.mm : 10.30...10.40 3rd speed 1/min : 785 C-rod trav.mm : 9.90...10.10 4th spaed 1/min: 1210 C-rod trav.mm : 9.30...9.50 FUEL-DELIVERY CHARACTERISTICS 1/min : 500 Speed Del.quantity cm3/: 43.0...45.0 1000H.: (39.5...46.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                    : FIA 5,9 B 1
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
                    : 12.09.86
Superceeded
Calibrating oil
                   : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no.
                    : 0 400 846 552
                                                       BASIC SETTING
Injection pump
Pump designation
                    : PES6A90D410RS2723
                                                                       1/mi: 1500
                                                       1st speed
EP type number
                    : 0 410 896 085
                                                       Contr.-ròd trav.mm: 10.00...10.10
Governor
Governor design.
                    : RQV300...1500AB1152-
                                                       Del.quantity cm3/ : 5.7...5.8
Governer no. : 0 420 212 196
                                                                      100H.: (5.5...6.0)
Customer-spec. information
Customer
                    : IVECO-FIAT
                                                                     cm3/:0.3
                                                       Dispersion
                    : 8060.05.662
Engine
                                                                      100H.: (0.4)
1st version kW : 88.0
                                                                     1/min: 300.0
                                                       2nd speed
                                                       Contr.-rod trav. m: 9.2...9.4
               1/min: 3000
Speed
                                                       Del.quantity cm3/: 1.0...1.6
100H.: (0.8...1.8)
Dispersion cm3/: 0.2
100H.: (0.4)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
                                                       (B) Setting of injection pump with
Overflow valve
                                                           externally-mounted governor
                    : 1 417 413 000
                                                       SLEEVE TRAVELS
Inlet press., bar: 1.00
                                                       1st speed 1/min: 345
                                                       Sleeve travel mm: 2.20...2.40
2nd speed 1/min: 410
Sleeve travel mm: 2.80...3.20
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                       3rd speed 1/min: 630
                                                         Sleeve travel mm: 4.30...4.70
Opening
                                                                    1/min: 1545
 pressure, bar : 172...175
                                                       4th speed
                                                         Sleeve travel mm: 8.60...8.70
                                                       5th speed 1/min: 1650
Test inj. tubing : 1 680 750 014
                                                         Sleeve travel mm: 9.30...9.50
Outside diameter x Wall thickness
                                                       SLEEVE POSITION
                                                       Control-lever position
                : 6.00x2.00x600
x Length mm
                                                                    Degree: -1
                                                                     17min: 1525
(A) Injection pump setting values
                                                       Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                       1st version
                                                      Speed 1/min: 1500
Del.quantity cm3/: 57.5...58.5
1000H.: (55.5...60.5)
Dispersion cm3/: 3.00
START OF DELIVERY
Test pressure, bar: 25...27
Prestroke mm
                 : 2.20...2.30
                    : (2.15...2.35)
                                                                    1000H.: (4.50)
E17
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 58...66
Testing:
1st c-rod trav.mm: 9.00
  Speed
           1/min : 1540...1550
2nd c-rod trav.mm : 4.00
  Speed 1/min: 1655...1685
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 10.00
Speed
           1/min : 300
C-rod trav.mm
                   : 9.20...9.40
CONSTANT REGULATION
             1/min: 330...430
Speed
TORQUE CONTROL
Dimension a mm : 0.90
Torque-control curve - 1st version
            1/min : 1500
1st speed
  C-rod trav.mm : 10.00...10.10
2nd speed 1/min: 500
C-rod trav.mm : 10.90...11.00
3rd speed 1/min : 725
C-rod trav.mm : 10.60...10.80
4th speed 1/min : 1175
  C-rod trav.mm : 10.20...10.40
FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 500
Del.quantity cm3/: 48.0...50.0
1000H.: (45.5...52.5)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam seguence : 1-5-3-6-2-4 Note inst. in remarks column Test sheet : MB 6.0 A 2 : 12.09.86 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75) Edition Superceeded Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 846 556 1st speed 1/mi: 1400 Injection pump Pump designation : PES6A90D410RS2667 Contr.-rod trav.mm: 11.10...11.20 EP type number : 0 410 896 080 Governor Del.quantity cm3/: 6.0...6.1 Governor design. : RQV300...1400AB1065-6L 100H.: (5.8...6.3) Governer no. : 0 420 212 198 cm3/:0.3Dispersion Customer-spec. information Customer : DAIMLER-BENZ 100H.: (0.4) : OM 366 Engine 1/min: 300.0 2nd speed Contri-rod trav. m: 9.0...9.6 Del.quantity cm3/: 1.0...1.4 100H.: (0.8...1.6) 1st version kW : 98.0 Speed 1/min: 2800 cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C (B) Setting of injection pump with externally-mounted governor : 38...42 Overflow valve SLEEVE TRAVELS : 1 417 413 000 1st speed 1/min: 300 Sleeve travel mm: 0.80...1.30 2nd speed 1/min: 500
Sleeve travel mm: 2.30...2.80
3rd speed 1/min: 750 Inlet press., bar: 1.00 Calibrating nozzle-holder : 0 681 343 009 assembly Sleeve travel mm: 4.10...4.30 4th speed 1/min: 1500 Opening Sleeve travel mm: 8.50...8.60 pressure, bar : 172...175 SLEEVE POSITION Control-lever position Test inj. tubing : 1 680 750 015 Degree: -1 1/min: 1500 Outside diameter Cont.-rod travelmm: 15.20...17.80 x Wall thickness : 6.00x1.50x600 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Speed 1/min: 1400 Del.quantity cm3/: 60.0...61.0 1000H:: (58.0...63.0) Dispersion cm3/: 3.00 1000H:: (4.50) per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 HIGHEST RATED SPEED : 2.25...2.35 Prestroke mm 1st version : (2.20...2.40)

E19

```
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 10.10
  Speed 1/min: 1440...1450
2nd c-rod trav.mm : 4.00
           1/min : 1545...1575
1/min : 1630
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 21...29
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 10.80
Speed 1/min : 300
C-rod trav.mm
                   : 9.00...9.60
CONSTANT REGULATION
             1/min: 540...700
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1400
1st speed
C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 400
  C-rod trav.mm : 12.40...12.50
3rd speed 1/min: 650
  C-rod trav.mm : 11.90...12.10
4th speed 1/min: 950
  C-rod trav.mm : 11.40...11.70
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 400
Speed
Del.quantity cm3/: 47.0...49.0
1000H: (44.5...51.5)
Speed 1/min: 750
Del.quantity cm3/: 48.0...50.0
1000H: (45.5...52.5)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS	Contrrod trav.mm: 9.0012.00   Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column	. , 2 0 0 2 1
Test sheet : MB 6,0 D Edition : 12.09.86 Superceeded : - Calibrating oil : ISO-4113	SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Combination no. : 0 400 846 559	BASIC SETTING
Injection pump Pump designation : PES6A90D410RS2710 EP type number : 0 410 896 082	1st speed
Governor design. : RQV3001400AB1065-	Del.quantity cm3/: 5.96.0
9L Governer no. : 0 420 212 202	100H.: (5.76.2)
Customer-spec. information	Dispersion cm3/: 0.3
Customer : DAIMLER-BENZ	100H.: (0.4)
Engine : 0M 366	2nd speed 1/min: 300.0 Contrrod trav. m: 8.58.7 Del.quantity cm3/: 1.01.4
Speed 1/min: 2800	190H.: (0.81.6) Dispersion cm3/: 0.2
TEST BENCH REQUIREMENTS	100H.: (0.4)
Calibrating-oil inlet temp. C : 3842	(B) Setting of injection pump with externally-mounted governor
Overflow valve : 1 417 413 000	SLEEVE TRAVELS 1st speed  1/min: 300 Sleeve travel mm: 0.801.30
Inlet press., bar : 1.00	2nd speed 1/min: 500 Sleeve travel mm: 2.30,2.80
Calibrating nozzle-holder assembly : 0 681 343 009	3rd speed 1/min: 750 Sleeve travel mm: 4.104.30 4th speed 1/min: 1500
Opening pressure, bar : 172175	Sleeve travel mm: 8.508.60
Test inj. tubing : 1 680 750 015	SLEEVE POSITION Control-lever position Degree: -1
Outside diameter	Speed 17min: 1500 Controd travelmm: 15.2017.80
<pre>x Wall thickness x Length mm : 6.00x1.50x600</pre>	FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values  START OF DELIVERY	1st version Speed 1/min: 1400 Del.quantity cm3/: 59.060.0 1000H.: (57.062.0) Dispersion cm3/: 3.00 1000H.: (4.50)
Test pressure, bar: 2527	HIGHEST RATED SPEED
Prestroke mm : 2.252.35   (2.202.40)	1st version
E21	

```
Control-lever
 position degrees: 58...66
Testing:
1st c-rod trav.mm: 9.30
  Speed 1/min: 1440...1450
2nd c-rod trav.mm: 4.00
Speed 1/min: 1530...1560
4th speed 1/min: 1650
C-rod trav.mm: 0.00...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 23...31
Testing:
Speed
              1/min : 100
C-rod trav.mm min: 10.10
Speed 1/min: 300
C-rod trav.mm
                     : 8.50...8.70
CONSTANT REGULATION
             1/min : 530...680
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed
             1/min : 1400
  C-rod trav.mm : 10.30...10.40
2nd speed 1/min: 500
C-rod trav.mm: 11.50...11.60
3rd speed 1/min: 750
  C-rod trav.mm : 11.10...11.30
4th speed 1/min: 1100
  C-rod trav.mm : 10.50...10.80
SWITCH-OVER POINT
              1/min: 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
              1/min : 500
Speed
Del.quantity cm3/: 45.0...47.0
1000H.: (42.5...49.5)
Speed 1/min: 850
Del.quantity cm3/: 47.5...50.5
1000H.: (45.0...53.0)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-45-90-135-180-225-Note inst. in remarks column 270-315 Tolerance + - 0 : 0.5(0.75) Test sheet Edition Superceeded : IHC 9,0 A 1 : 19.12.86 SD mark cyl. no. : 1 : 4.84 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 848 023 1st speed 1/mi: 1400 Injection pump Contra-rod trav.mm: 10.70 Pump designation : PES8A95D32ORS2586 Del.quantity cm3/ : 5.9...6.1 Governor Governor design. : RQV325...1400AB1087R 100H.: (-) Customer-spec. information Customer : IH cm3/:0.3Dispersion Engine : D9L 100H.: (-) 2nd speed 1/min: 325 Contr.-rod trav. m: 7.30 Del.quantity cm3/: 0.9...1.5 100H.: (-) 1st version kW : 121.4 Speed 1/min: 2800 TEST BENCH REQUIREMENTS cm3/:0.3Dispersion Calibrating-oil inlet temp. OC 100H.: (-) : 40...45 SLEEVE POSITION Overflow vaive Control-lever position : 1 417 413 019 Degree: -3
Speed 1/min: 1430
Cont.-rod travelmm: 15.20...17.80 Inlet press., bar : 2.50 Calibrating nozzle-holder FULL-LOAD DELIV. AT FULL-LOAD STOP assembly : 0 681 343 009 1st version Speed Opening 1/min: 1400 Del.quantity cm3/: 59.5...61.5 1000H.: (57.5...63.5) Dispersion cm3/: 3.0 1000H.: (-) pressure, bar : 172...175 Test inj. tubing : 1 680 750 008 Outside diameter HIGHEST RATED SPEED x Wall thickness 1st version : 6,00x2,00x600 x Length mm Control-lever position degrees: 61...69 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 9.70 Speed 1/min: 1440...1450 per values 2nd c-rod trav.mm : 4.00 START OF DELIVERY 1/min: 1520...1550 Speed 4th speed 1/min: 1650 Prestroke mm : 2.55...2.65 C-rod trav.mm : 0.00...1.00 : (2.50...2.70) Contra-rod trav.mm: 10.50 LOWEST RATED SPEED I Cam sequence : 1-8-7-3-6-4-2 Control-lever position degrees: 6...14

Testing: Speed 1/min : 100 C-rod trav.mm min: 9.60

Speed 1/min: 325

C-rod trav.mm : 7.20...7.40

C-rod trav.mm : 2.0

Speed 1/min: 680...740

SWITCH-OVER POINT

1/min : 205...265 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 800 Del.quantity cm3/: <54.0 1000H.: (<58.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column SD ang. spacing CS: 0-120-240 Tolerance + - : 0.50 (0.75) Test sheet : KHD 3,0 C : 20.10.86 Edition Superceeded BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 1050 Combination no. : 0 400 863 011 Contr.-rod trav.mm: 8.90...9.00 Injection pump Pump designation : PES3A90D410/3RS2720 Deliguantity cm3/: 6.0...6.1 EP type number : 0 410 893 005 100H.: (5.8...6.3) Governor : RSV325...1150A0C2219 Governor design. Dispersion cm3/:0.3: 0 420 232 466 Governer no. 100H.: (0.4) Customer-spec. information 1/min: 375.0 Customer : KHD 2nd speed Contr.-rod trav. m: 6.8...7.0 Del.quantity cm3/: 0.9...1.5 100H.: (0.7...1.7) : F3L913G Engine 1/min: 2300 Speed cm3/:0.2Dispersion TEST BENCH REQUIREMENTS 100H.: (0.4) Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar: 1.00 Governor-spring reload Notch setting x : 5.00 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version pressure, bar : 172...175 1/min: 1050 Speed Del.quantity cm3/: 60.0...61.0 1000H: (58.0...63.0) cm3/: 3.00 Test inj. tubing : 1 680 750 014 Dispersion 1000H.: (4.50) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00x2.00x600 1st version Control-lever (A) Injection pump setting values position degrees: 55...63 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm : 7.90 Speed 1/min: 1090...1100 2nd c-rod trav.mm : 4.00 START OF DELIVERY Speed 1/min: 1115...1145 3rd c-rod trav.mm: 4.00 Test pressure, bar: 25...27 1/min : 1140...1170 Prestroke mm : 2.50...2.60 Speed : (2.45...2.65) 1/min : 1305 4th speed Contr.-rod trav.mm: 9.00...12.00 C-rod tray.mm : 0.30...1.40 Cam sequence : 1- 3- 2

**E25** 

LOWEST RATED SPEED I Control-lever position degrees: 19...27
Setting point w/out aux. spring
Speed 1/min: 375 Contr.-rod trav.mm: 6.4 Testing: 1/min: 100 Speed C-rod trav.mm min: 19.50 Speed 1/min: 375 C-rod trav.mm : 6.80...7.00 C-rod trav.mm : 2.00 Speed 1/min: 510...570 TORQUE CONTROL Dimension a mm : 0.70 Torque-control curve - 1st version 1st speed 1/min : 1050 C-red trav.mm : 8.90...9.00 2nd speed 1/min: 500 C-rod trav.mm: 9.60...9.70 4th speed 1/min: 640 C-rod trav.mm : 9.30...9.50 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 600 Del.quantity cm3/: 50.5...52.5 1000H:: (48.0...55.0) Remarks: **APPLICATION** 

Loading machine

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 1 G 6 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition : 12.09.86 Superceeded : 9.85 : ISO-4113 Calibrating oil BASIC SETTING £ 0 400 864 051 Combination no. 1/mi: 1175 1st speed Injection pump Pump designation : PES4A85D410/3RS2610 Contr.-red trav.mm: 11.20...11.30 EP type number : 0 410 884 951 Governor Del.quantity cm3/ : 6.3...6.5 Governor design. : RSV325...1150A8C2102 100H.: (6.1...6.7) : 0 420 232 290 Governer no. cm3/:0.3Dispersion Customer-spec. information Customer 190H.: (0.4) : F4L913 Engine 2nd speed 1/min: 325.0 Contr.-rod trav. m: 8.7...8.9 Del.quantity cm3/: 0.7...1.3 100H:: (0.5...1.5) Dispersion cm3/: 0.2 100H:: (0.4) 1st version kW : 55.2 Speed 1/min: 2300 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Notch setting x : 4.00 Inlet press., bar: 1.00 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening. 1st version pressure, bar : 172...175 Speed 1/min: 1175 Del.quantity cm3/: 63.0...65.0 1000H.: (61.0...67.0) Dispersion cm3/: 3.00 1000H.: (4.50) Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00X2.00X600 1st version Control-lever (A) Injection pump setting values position degrees: 52...60 Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.20 Speed 1/min : 1215...1225 2nd c-rod trav.mm : 4.00 per values \_\_\_\_ START OF DELIVERY Speed 1/min: 1250...1280 3rd c-rod trav.mm: 4.00 Test pressure, bar: 25...27 1/min : 1280...1310 : 2.50...2.60 Prestroke mm Speed : (2.45...2.65) 1/min : 1430 4th speed

**E27** 

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Setting point w/out aux. spring Speed 1/min : 325 Contr.-rod trav.mm: 8.3 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.50 Speed 1/min : 325 C-rod trav.mm : 8.70...8.90 : 2.00 C-rod trav.mm Speed 1/min : 460...520 TORQUE CONTROL Dimension a mm : 1.00 Torque-control curve - 1st version 1st speed 1/min: 1175 C-rod trav.mm : 11.20...11.30 1/min : 500 2nd speed C-rod trav.mm : 12.20...12.30 3rd speed 1/min : 800 C-rod trav.mm : 11.90...12.00 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 800 Del.quantity cm3/: 60.0...62.0 1000H:: (57.5...64.5) Remarks: APPLICATION

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 1 G 23 SD ang. spacing  $^{0}$ CS: 0-90-180-270 Tolerance + -  $^{0}$ : 0.50 (0.75) Edition : 12.09.86 Superceeded Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 864 055 1st speed 1/mi: 1150 Injection pump Pump designation : PES4A85D410/3RS2610 Contr.-rod trav.mm: 11.30...11.40 EP type number : 0 410 884 951 Governor Del.quantity cm3/: 6.8...6.9 Governor design. : RSV325...1150A8C2163 100H.: (6.6...7.1) Governer no. : 0 420 232 296 cm3/:0.3Dispersion Customer-spec. information Customer 100H.: (0.4) : F4L913 Engine 1/min: 325.0 2nd speed Contr.-rod trav. m: 9.1...9.3 Del.quantity cm3/: 1.5...1.9 100H.: (1.3...2.1) 1st version kW : 55.0 1/min: 2300 Speed cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38 . . . 42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...1.00 Governor-spring reload Inlet press., bar: 1.00 Notch setting x : 4.50 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening. 1st version pressure, bar : 172...175 Speed 1/min: 1150 Del.quantity cm3/: 68.0...69.0 1000H.: (66.0...71.0) Dispersion cm3/: 3.00 1000H.: (4.50) Test in i. tubing : 1 680 750 014 Outside diameter x Wall thickness HIGHEST RATED SPEED 1st version x Length mm : 6.00x2.00x600 Control-lever position degrees: 51...59 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.30 Speed 1/min : 190...1200 per values \_\_\_\_ 2nd c-rod trav.mm: 4.00 START OF DELIVERY Speed 1/min : 1225...1255 Test pressure, bar: 25...27 3rd c-rod trav.mm: 4.00 1/min : 1245...1275 : 2.50...2.60 Speed Prestroke mm : (2.45...2.65) 4th speed 1/min : 1400

F01

: 0.30...1.40 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 15...23 Setting point w/out aux. spring Speed 1/min: 325 Contr.-rod trav.mm: 8.7 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 1/min : 325 Speed : 9.10...9.30 C-rod trav.mm : 2.00 C-rod trav.mm Speed 1/min : 470...530 TORQUE CONTROL Dimension a mm : 0.80 Torque-control curve - 1st version 1st speed 1/min : 1150 C-rod trav.mm : 11.30...11.40 1/min : 500 2nd speed C-rod trav.mm : 12.10...12.20 1/min: 800 3rd speed C-rod trav.mm : 11.80...12.00 4th speed 1/min: 900 C-rod trav.mm : 11.60...11.80 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 500 Del.quantity cm3/: 58.0...61.0 1000H.: (55.5...63.5) 1000H.: (5.50) Remarks: : DX 80 **APPLICATION** 

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column : KHD 4,1 C 7 Test sheet Edition : 12.09.86 Superceeded : ISO-4113 Calibrating oil Combination no. : 0 400 864 058 Injection pump Pump designation : PES4A80D410/3RS2523 EP type number : 0 410 884 043 Governor Governor design. : RSV325...1250A8C540-: 0 420 232 355 Governer no. Customer-spec. information Customer : KHD : F4L913 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar : 1.00 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27

: 1.90...2.00

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 3- 4- 2

: (1.85...2.05)

SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) BASIC SETTING 1st speed 1/mi: 1250 Contr.-rod trav.mm: 11.60...11.70 Del.quantity cm3/: 6.8...6.9 100H.: (6.7...7.1) Dispersion cm3/:0.2100H.: (0.4) 2nd speed 1/min: 325.0 Contr.-rod trav. m: 8.2...8.4 Del.quantity cm3/: 1.0...1.6 100H.: (0.8...1.7) cm3/: 0.2 100H.: (0.3) Dispersion SLEEVE POSITION Governor-spring reload Notch setting x : 4.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1250
Del.quantity cm3/: 68.5...69.5
1000H.: (67.0...71.0)
Dispersion cm3/: 2.50 1000H.: (4.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 52...60 Testing: 1st c-rod trav.mm : 10.60 1/min: 1290...1300 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1320...1350
3rd c-rod trav.mm: 4,00
Speed 1/min: 1320...1350
4th speed 1/min: 1555 C-rod tray.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 13...21 Setting point w/out aux. spring Speed 1/min: 325

Prestroke mm

Contr.-rod trav.mm: 6,5 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 1/min : 325 Speed C-rod trav.mm : 6.90...7.10 C-rod trav.mm : 2.00 Speed 1/min : 630...690 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 11.60...11.70 2nd speed 1/min : 500 C-rod trav.mm : 12.10...12.20 4th speed 1/min: 965 C-rod trav.mm : 11.80...12.00 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 800 Del.quantity cm3/: 64.5...66.5 1000H.: (62.5...68.5)

Cam sequence : 1- 3- 4- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : KHD 4,1 D 3 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) : 12.09.86 Edition Superceeded : 1.86 : ISO-4113 BASIC SETTING Calibrating oil Combination no. : 0 400 864 060 1/mi: 1250 1st speed Injection pump Contr.-rod trav.mm: 12.70...12.80 Pump designation : PES4A85D410/3RS2638 EP type number : 0 410 884 950 Del.quantity cm3/: 8.2...8.3 Governor Governor design. : RSV325...1400A8C707L Governer no. : 0 420 232 336 100H.: (8.0...8.5) Dispersion cm3/:0.3Customer-spec. information Customer : KHD 100H.: (0.4) Engine : BF4L913 1/min: 325.0 2nd speed Contr.-rod trav. m: 8.4...8.6 1st version kW : 78.0 Del.quantity cm3/: 0.9...1.5 100H.: (0.7...1.7) cm3/: 0.2 100H.: (0.4) Speed 1/min: 2800 Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 Overflow valve Speed 17min: 800 : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar: 1.00 Governor-spring reload Notch setting x : 5.25 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening 1st version pressure, bar : 172...175 1/min: 1250 Speed Charge press. hPa : 700 Del.quantity cm3/: 82.5...83.5 1000H.: (80.5...85.5) Dispersion cm3/: 3.00 1000H.: (4.50) Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 HIGHEST RATED SPEED x Length mm 1st version (A) Injection pump setting values Control-lever Insp. values in parentheses Set constant delivery quant. position degrees: 58...66 per values \_\_\_\_ Testing: 1st c-rod trav.mm : 11.70 Speed 1/min: 1290...1300 2nd c-rod trav.mm: 4.00 START OF DELIVERY Test pressure, bar: 25...27 1/min: 1340...1370 Speed 3rd c-rod trav.mm : 4.00 Prestroke mm : 2.50...2.60 1/min : 1390...1420 : (2.45...2.65) Speed Contr.-rod trav.mm: 9.00...12.00 1/min: 1560 4th speed F05

```
C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
            1/min : 325
Contra-rod trav.mm: 8.0
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 19.50
Speed 1/min: 325
                 : 8.40...8.60
C-rod trav.mm
                   : 2.00
C-rod trav.mm
             1/min: 660...720
Speed
TORQUE CONTROL
Dimension a mm : 0.80
Torque-control curve - 1st version
1st speed 1/min: 1250
C-rod trav.mm: 12.70...12.80
2nd speed 1/min: 500
  C-rod trav.mm : 13.60...13.70
4th speed 1/min: 1015
  C-rod trav.mm : 13.10...13.30
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
             hPa : 700
Pressure
Contr.-rod trav.mm: 13.60...13.70
Measurement
Speed
             1/min : 500
1st pressure hPa : -
  C-rod trav.mm
                   : 12.30...12.40
2nd pressure hPa : 410
                   : 13.20...13.30
  C-rod trav.mm
                   : 250
3rd pressure hPa
  C-rod trav.mm
                   : 12.60...12.80
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa: 700
             1/min: 850
Speed
Del.quantity cm3/: 84.5...86.5
             1000H.: (82.0...89.0)
Charge press. hPa : -
Speed 1/min: 500
Del.quantity cm3/: 59.5...61.5
1000H.: (57.5...63.5)
```

Remarks:

F06

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 2 Edition : 12.09.86 Superceeded : 8.85 Calibrating oil : ISO-4113

: 0 400 864 061 Combination no.

Injection pump

Pump designation : PES4A85D410/3RS2638 EP type number : 0 410 884 950

Governor'

Governor design. : RSV325...1150A2C707-

1L

: 0 420 232 438 Governer no.

Customer-spec. information Customer

: BF4L913 Engine

1st version kW : 67.0 1/min: 2300 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00X2.00X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2.50...2.60 Prestroke mm

: (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 4th speed 1/min : 1340 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) position degrees: 17...25 Setting point w/out aux. spring Speed 1/min: 325 Contr.-rod trav.mm: 7.7 BASIC SETTING 1st speed 1/mi: 1000 Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 325 Contr.-rod trav.mm: 12.70...12.80 C-rod trav.mm : 8.10...8.30 C-rod trav.mm : 2.00 Del.quantity cm3/: 8.1...8.2 100H.: (7.9...8.4) 1/min : 655...715 Speed cm3/:0.3Dispersion TORQUE CONTROL Dimension a mm : 1.00 Torque-control curve - 1st version 1st speed 1/min: 1000 C-rod trav.mm: 12.70...12.80 100H.: (0.4) 2nd speed 1/min: 325.0 Contr.-rod trav. m: 8.1...8.3 2nd speed 1/min: 500 Del.quantity cm3/: 1.0..1.6 100H:: (0.8..1.8) Dispersion cm3/: 0.2 C-rod trav.mm : 13.70...13.80 3rd speed 1/min : 800 C-rod trav.mm : 13.30...13.50 4th speed 1/min : 900 100H.: (0.4) C-rod trav.mm : 12.90...13.10 SLEEVE POSITION Control-lever position compensator (LDA, ADA, ALDA) Degree: -3 1/min: 800 Cont.-rod travelmm: 0.30...0.70 1st version Setting Governor-spring reload 1/min : 500 Speed ` Pressure hPa : 700 Notch setting x : 4.25 Contr.-rod trav.mm: 13.70...13.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Measurement 1st version 1/min : 500 Speed Speed 1/min: 1000 Charge press. hPa: 700 Del.quantity cm3/: 81.5...82.5 1000H.: (79.5...84.5) Dispersion cm3/: 3.00 1000H.: (4.50) 1st pressure hPa : -C-rod trav.mm : 12.10...12.20 2nd pressure hPa : 450 C-rod trav.mm : 13.30...13.40 3rd pressure hPa : 290 C-rod trav.mm : 12.50...12.70 HIGHEST RATED SPEED FUEL-DELIVERY CHARACTERISTICS 1st version Control-lever Charge press. hPa: 700 Speed 1/min: 800 Del.quantity cm3/: 86.5...88.5 1000H.: (84.0...91.0) position degrees: 39...47 Testing: Charge press. hPa : -Speed 1/min : 500 Del.quantity cm3/ : 61.5...63.5 1000H.: (59.5...65.5) 1st c-rod trav.mm : 11.70 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 Speed 1/min: #110...1140 3rd c-rod trav.mm : 4,00 Speed 1/min : 1175...1205

F08

Remarks:	
F09	

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 4,1 D 1 Edition : 12.09.86 Superceeded : 10.85 : ISO-4113 Calibrating oil

Combination no. : 0 400 864 062

Injection pump

Pump designation : PES4A85D410/3RS2638

EP type number : 0 410 884 950

Governor

Governor design. : RSV325...1150A2C707-

2L

: 0 420 232 439 Governer no.

Customer-spec. information Customer

: BF4L913 Engine

1st version kW : 67.0 1/min: 2300 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00X2.00X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2.50...2.60 Prestroke mm

: (2.45...2.65)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 4th speed 1/min: 1340 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever SD ang. spacing CS: 0-90-180-270 Tolerance + - 0.50 (0.75) position degrees: 17...25 Setting point w/out aux. spring Speed 1/min: 325 Contr.-rod trav.mm: 7.7 BASIC SETTING 1/mi: 1000 1st speed Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Contr.-rod trav.mm: 12.70...12.80 Speed 1/min : 325 C-rod trav.mm : 8.10...8.30 C-rod trav.mm : 2.00 Speed 1/min : 655...715 Del.quantity cm3/: 8.1...8.2 100H.: (7.9...8.4) cm3/: 0.3 Dispersion TORQUE CONTROL Dimension a mm : 1.00 100H.: (0.4) Torque-control curve - 1st version 1st speed 1/min: 1000 2nd speed 1/min: 325.0 Contr.-rod trav. m: 8.1...8.3 C-rod trav.mm : 12.70...12.80 2nd speed 1/min: 500 Del.quantity cm3/: 1.0...1.6 100H:: (0.8...1.8) Dispersion cm3/: 0.2 C-rod trav.mm : 13.70...13.80 3rd speed 1/min : 800 C-rod trav.mm : 13.30...13.50 4th speed 1/min: 900 C-rod trav.mm: 12.90...13.10 100H.: (0.4) SLEEVE POSITION Control-lever position compensator (LDA, ADA, ALDA) Degree: -3 1/min: 800 Cont.-rod travelmm: 0.30...0.70 1st version Setting Speed 1/min: 500 Pressure hPa: 700 Governor-spring reload Notch setting x : 4.25 Contr.-rod trav.mm: 13.70...13.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Measurement 1/min : 500 1st version Speed Speed 1/min: 1000 Charge press. hPa: 700 Del.quantity cm3/: 81.5...82.5 1st pressure hPa : -C-rod trav.mm : 12.10...12.20
2nd pressure hPa : 450
C-rod trav.mm : 13.30...13.40
3rd pressure hPa : 290 1000H.: (79.5...84.5) cm3/ : 3.00 1000H.: (4.50) Dispersion C-rod trav.mm : 12.50...12.70 HIGHEST RATED SPEED 1st version FUEL-DELIVERY CHARACTERISTICS Control-lever Charge press. hPa: 700 Speed 1/min: 800 Del.quantity cm3/: 86.5...88.5 1000H.: (84.0...91.0) position degrees: 39...47 Testing: 1st c-rod trav.mm : 11.70 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 Charge press. hPa : -Speed 1/min : 500 Del.quantity cm3/ : 61.5...63.5 1000H:: (59.5...65.5) Speed 1/min: 1110...1140 3rd c-rod trav.mm: 4.00 1/min : 1175...1205 Speed

Remarks: APPLICATION Installation 2300 F12

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 4,1 D 4 SD ang. spacing  $^{0}$ CS: 0-90-180-270Tolerance  $+-^{0}$ : 0.50 (0.75) Edition : 12.09.86 Superceeded : 10.85 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 864 065 1st speed 1/mi: 1250 Injection pump Pump designation : PES4A85D410/3RS2638 Contr.-rod trav.mm: 11.60...11.70 EP type number : 0 410 884 950 Del.quantity cm3/ : 7.0...7.1 Governor Governor design. : RSV325...1400A8C540-100H.: (6.8...7.3) Governer no. : 0 420 232 457 cm3/:0.3Dispersion Customer-spec. information Customer 100H.: (0.5) Engine : BF4L913 1/min: 325.0 2nd speed Contr.-rod trav. m: 9.0...9.2 Del.quantity cm3/: 1.0...1.6 100H.: (0.8...1.8) 1st version kW : 35.0 1/min: 2800 Speed cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar: 1.00 Governor-spring reload Notch setting x : 4.75 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening 1st version pressure, bar : 172...175 1/min: 1250 Speed Del.quantity cm3/: 70.0...71.0 1000H.: (68.0...73.0) cm3/ : 3.00 1000H.: (5.00) Test inj. tubing : 1 680 750 014 Dispersion Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 56...64 Insp. values in parentheses Set constant delivery quant. Testing: per values 1st c-rod trav.mm: 10.60 Speed 1/min: 1290...1300 2nd c-rod trav.mm: 4.00 Speed 1/min: 1325...1355 START OF DELIVERY Test pressure, bar: 25...27 3rd c-rod trav.mm : 4.00 1/min : 1390...1420 Prestroke mm : 2.50...2.60 Speed 1/min: 1560 : (2.45...2.65) 4th speed

F13

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Setting point w/out aux. spring Speed 1/min: 325 Contr.-rod trav.mm: 7.7 Testing: 1/min: 100 Speed C-rod trav.mm min: 19.50
Speed 1/min: 325
C-rod trav.mm : 8.10...8.30
C-rod trav.mm : 2.00 Speed 1/min : 630...690 TORQUE CONTROL Dimension a mm : 1.10 Torque-control curve - 1st version 1st speed 1/min: 1250 C-rod trav.mm: 11.60...11.70 2nd speed 1/min: 500 C-rod trav.mm : 12.70...12.80 4th speed 1/min : 1000 C-rod trav.mm : 12.20...12.40 FUEL-DELIVERY CHARACTERISTICS 1/min : 800 Del.quantity cm3/: 66.0...68.0 1000H: (63.5...70.5) Speed 1/min: 1000

Del.quantity cm3/: 66.0...68.0 1000H.: (63.5...70.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : KHD 4,1 G : 23.09.86 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition Superceeded Calibrating oil : ISO-4113 BASIC SETTING : 0 400 864 066 Combination no. 1/mi: 880 1st speed Injection pump Pump designation : PES4A80D410/3RS2717 EP type number : 0 410 884 045 Contr.-rod trav.mm: 10.20...10.30 Del.quantity cm3/: 4.9...5.0 Governor Governor design. : RSV325...900A1C602-2 100H.: (4.8...5.2) Governer no. : 0 420 232 448 Dispersion cm3/:0.2Customer-spec. information Customer 100H.: (0.4) 2nd speed 1/min: 325.0 Contr.-rod trav. m: 7.9...8.1 Del.quantity cm3/: 0.9...1.5 Engine : F4L913 1st version kW : 43.0 1/min: 1800 100H.: (0.7...1.6) Speed cm3/:0.2Dispersion TEST BENCH REQUIREMENTS 100H.: (0.3) Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Inlet press., bar: 1.00 Notch setting x : 4.25 Calibrating nozzle-holder assembly : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening 1st version pressure, bar : 172...175 1/min: 880 Speed Del.quantity cm3/: 49.5...50.5 1000H:: (48.0...52.0) Dispersion cm3/: 2.50 1000H:: (4.00) Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 43...51 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm : 9.20 Speed 1/min: 920...930 2nd c-rod trav.mm: 4.00 START OF DELIVERY Test pressure, bar: 25...27 Speed 1/min: 945...975 4th speed 1/min: 1110 C-rod trav.mm : 0.30...1.40 : 2.10...2.20 Prestroke mm (2.05...2.25)

F15

LOWEST RATED SPEED I

Control-lever

position degrees: 20...28 Setting point w/out aux. spring

1/min : 325 Speed

Contr.-rod trav.mm: 8.0

Speed 1/min: 325 C-rod trav.mm: 7.90...8.10 C-rod trav.mm: 2.00 Speed 1/min: 355...415

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : KHD 4,1 D 6 BASIC SETTING : 01.12.86 Edition Superceeded 1/mi: 1250 1st speed : ISO-4113 Calibrating oil Contr.-rod trav.mm: 12.60...12.70 Combination no. : 0 400 864 067 Del.quantity cm3/: 8.3...8.4 Injection pump Pump designation : PES4A85D410/3RS2638 100H.: (8.1...8.6) EP type number : 0 410 884 950 cm3/: 0.3 Governor Dispersion Governor design. : RSV325...1400A8C661L Governer no. : 0 420 232 327 100H.: (0.5) 1/min: 325.0 Customer-spec. information 2nd speed Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 1.0...1.6 100H.: (0.8...1.8) Customer : KHD Engine : BF4L913 cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar : 1.00 Governor-spring reload Notch setting x : 4.00 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version pressure, bar : 172...175 1/min: 1250 Speed Del.quantity cm3/: 83.5...84.5 1000H.: (81.5...86.5) Dispersion cm3/: 3.00 Test inj. tubing : 1 680 750 014 1000H.: (5.00) Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 53...61 Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.60 per values Speed 1/min: 1290...1300 START OF DELIVERY 2nd c-rod trav.mm : 4.00 Speed 1/min: 1310...1340
3rd c-rod trav.mm: 4.00
Speed 1/min: 1325...1355
4th speed 1/min: 1540 Test pressure, bar: 25...27 Prestroke mm : 2.50...2.60 : (2.45...2.65) Contr.-rod trav.mm: 9.00...12.00 C-rod trav.mm : 0.30...1.40 Cam sequence : 1- 3- 4- 2 LOWEST RATED SPEED I

Control-lever

position degrees: 14...22 Setting point w/out aux. spring 1/min : 325 Speed Contr.-rod trav.mm: 8.2 Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 325

: 8.60...8.80 : 2.00 C-rod trav.mm C-rod trav.mm

1/min: 630...690 Speed

TORQUE CONTROL

Dimension a mm : 0.90

Torque-control curve - 1st version

1st speed 1/min: 1250 C-rod trav.mm: 12.60...12.70 2nd speed 1/min: 500

C-rod trav.mm : 13.50...13.60 4th speed 1/min : 1020 C-rod trav.mm : 13.00...13.20

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 500

Del.quantity cm3/: 77.0...79.0 1000H.: (74.5...81.5) Speed 1/min: 825 Del.quantity cm3/: 85.0...87.0 1000H.: (82.5...89.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS	
Note inst. in remarks column	SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet : FOR 5.9 D   Edition : 12.09.86   Superceeded : 1.86   Calibrating oil : ISO-4113	BASIC SETTING
Calibrating oil : ISO-4113	1st speed
Combination no. : 0 400 866 104	Contrrod trav.mm: 11.5011.60
Injection pump Pump designation : PES6A90D210RS2628 EP type number : 0 410 896 074	Del.quantity cm3/: 8.38.4 100H.: (8.18.6)
Governor   Governor design. : RSV3251200A0C2140	Dispersion cm3/: 0.3
Governer no. : 0 420 232 372	100H.: (0.4)
Customer-spec. information Customer : FORD/GB	2nd speed 1/min: 350.0 Contrrod trav. m: 5.25.4 Del.quantity cm3/: 0.51.1
Engine : DOVER 363 T/C	100H.: (0.31.3)
TEST BENCH REQUIREMENTS	Dispersion cm3/: 0.2 100H.: (0.4)
Calibrating-oil inlet temp. °C : 3842	SLEEVE POSITION Control-lever position Degree: -3
Overflow valve : 1 417 413 000	Speed 1/min: 800 Controd travelmm: 0.300.70
Inlet press., bar : 1.00	Governor-spring reload Notch setting x : 4.00
Calibrating nozzle-holder assembly : 0 681 343 009	FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening pressure, bar : 172175	1st version Speed 1/min: 1175 Charge press. hPa: 700
Test inj. tubing : 1 680 750 014	Del.quantity cm3/: 83.584.5 1000H.: (81.586.5) Dispersion cm3/: 3.00
Outside diameter   I   x Wall thickness   x Length mm   : 6.00x2.00x600   !	1000H.: (4.50) HIGHEST RATED SPEED
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values	1st version Control-lever position degrees: 6573  Testing:
START OF DELIVERY Test pressure, bar: 2527	1st c-rod trav.mm : 10.50 Speed 1/min : 12401250 2nd c-rod trav.mm : 4.00 Speed 1/min : 13601390
Prestroke mm : 2.702.80 : (2.652.85)	Speed 1/min: 13601390  3rd c-rod trav.mm: 4.00  Speed 1/min: 13651395
Contrrod trav.mm: 9.0012.00   Cam sequence : 1-5-3-6-2-4	4th speed 1/min: 1540 C-rod trav.mm: 0.301.40

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 35...43
Setting point w/out aux. spring
           1/min : 350
Speed
Contr.-rod trav.mm: 4.8
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 19.50
Speed 1/min: 350
                : 5.20...5.40
C-rod trav.mm
                  : 2.00
C-rod trav.mm
Speed 1/min: 490...550
            1/min : 625
Speed
C-rod trav.mm max: 1.00
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1175
  C-rod trav.mm : 11.50...11.60
2nd speed 1/min: 500
  C-rod trav.mm : 11.50...11.70
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
hPa : 700
Speed
Pressure
Contr.-rod trav.mm: 11.50...11.60
Measurement
             1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 480
G-rod trav.mm : 11.10...11.20
3rd pressure hPa : 220
  C-rod trav.mm : 10.30...10.50
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed 1/min : 50
            1/min : 500
Del.quantity cm3/: 49.0...51.0
1000H.: (47.0...53.0)
Remarks:
At start of delivery, locating pin
must latch into slit in pointer.
```

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : MWM 6,2 E 3 : 12.09.86 SD mark cyl. no. : -1 Superceeded : 10.85 Calibrating oil : ISO-4113 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 Difference ocs : 3.50...4.50 Combination no. : 0 400 866 114 Injection pump Pump designation : PES6A90D320/3RS2660 BASIC SETTING EP type number : 0 410 896 078 Governor 1/mi: 1200 1st speed Governor design. : RSV325...1200A0C2182 Contr.-rod trav.mm: 12.00...12.10 -1R : 0 420 233 192 Governer no. Del.quantity cm3/: 9.7...9.8 Customer-spec. information Customer - MWM 100H.: (9.5...10.0) Engine : TD226B-6 cm3/:0.3Dispersion TEST BENCH REQUIREMENTS 190H<sub>2</sub>: (0.4) 2nd speed 1/min: 325.0 Contr.-rod trav. m: 6.9...7.1 Del.quantity cm3/: 0.8...1.4 100H.: (0.6...1.6) Dispersion cm3/: 0.2 Calibrating oil inlet temp. <sup>D</sup>C : 38...42 Overflow valve : 1 417 413 000 100H.: (0.4) Inlet press., bar : 1.00 SLEEVE POSITION Calibrating nozzle-holder Control-lever position : 0 681 343 009 assembly Degree: -3 1/min: 800 Opening Cont.-rod travelmm: 0.30...0.70 pressure, bar : 172...175 Governor-spring reload Notch setting x : 3.25 Test inj. tubing : 1 680 750 014 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version Speed 1/min: 1200 Charge press. hPa: 700 : 6.00x2.00x600 x Length mm Del.quantity cm3/: 97.5...98.5 1000H.: (95.5...100.5) Dispersion cm3/: 3.00 1000H.: (4.50) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY HIGHEST RATED SPEED Test pressure, bar: 25...27 1st version Control-lever : 2.95...3.05 Prestroke mm position degrees: 41...49 : (2.90...3.10) Contr.-rod trav.mm: 9.00...12.00 Testing: Cam sequence : 1-5- 3- 6- 2- 4 1st c-rod trav.mm : 11.00 Speed 1/min: 1240...1250

2nd c-rod trav.mm : 4.00 Speed 1/min: 1275...1305 3rd c-rod trav.mm : 4.00 Speed 1/min: 1300...1330 4th speed 1/min: 1465 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 14...22 Setting point w/out aux. spring 1/min : 325 Contr.-rod trav.mm: 6.5 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 1/min : 325 Speed C-rod trav.mm : 6.90...7.10 C-rod trav.mm : 2.00 1/min : 495...555 Speed TORQUE CONTROL Dimension a mm : 0.30 Torque-control curve - 1st version 1st speed 1/min : 1200 C-rod trav.mm : 12.00...12.10 2nd speed 1/min: 500 C-rod trav.mm : 12.30...12.40 3rd speed 1/min : 1115 C-rod trav.mm : 12.10...12.30 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.30...12.40 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.10...10.20 2nd pressure hPa : 275 C-rod trav.mm : 11.70...11.89 3rd pressure hPa : 80 C-rod trav.mm : 10.60...10.80 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 275 Speed 1/min : 500 Del.quantity cm3/: 83.0...85.0 1000H.: (80.5...87.5) Charge press. hPa : -1/min : 500 Speed

Del.quantity cm3/: 61.0...62.0 1000H.: (59.0...64.0)

Remarks: APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 2- 3 Note inst. in remarks column Test sheet Edition Superceeded : VAL 2,7 A SD ang. spacing CS: 0-120-240 Tolerance + - : 0.50 (0.75) : 12.09.86 Superceeded : 12.85 Calibrating oil : ISO-4113 SD mark cyl. no. : 1 Combination no. : 0 400 873 037 START OF DELIVERY DIFFERENCE Injection pump Pump designation : PES3A95D32ORS2711 betw.c-rod trav.mm: 8.50...9.50 EP type number : 0 410 893 998 & c-rod tray max. : 21.0 Difference CS : 4.50...5.50 Governor Governor design.: RSV325...1175A0C2178 -3R BASIC SETTING Governer no. : 0 420 233 206 1st speed 1/mi: 1210 Customer-spec. information Customer : VALMET Contr.-rod trav.mm: 10.20...10.30 : 309 DS4 Engine Del.quantity cm3/ : 7.5...7.7 1st version kW : 45.0 100H.: (7.3...7.9) 1/min: 2350 Speed Dispersion cm3/:0.3TEST BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. OC : 38...42 2nd speed 1/min: 325.0 Contr.-rod trav. m: 6.1...6.3 Overflow valve Del.quantity cm3/: 1.7...2.5 100H.: (1.4...2.7) cm3/: 0.3 100H.: (0.5) : 1 417 413 000 Dispersion Inlet press., bar: 1.00 SLEEVE POSITION Calibrating nozzle-holder : 0 681 343 009 Control-lever position assembly Degree: -3 1/min: 800 Opening Speed pressure, bar : 172...175 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Test inj. tubing : 1 680 750 014 Notch setting x : 4.75 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm 1st version Speed 1/min: 1210 Del.quantity cm3/: 75.5...77.5 1000H:: (73.5...79.5) Dispersion cm3/: 3.50 1000H:: (6.00) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY HIGHEST RATED SPEED Test pressure, bar: 25...27 1st version Control-lever : 2.50...2.60 Prestroke mm position degrees: 41...49 : (2.45...2.65)

F23

```
Testing:
1st &-rod trav.mm : 9.20
Speed 1/min: 1250...1260
2nd c-rod trav.mm: 4.00
Speed 1/min: 1325...1355
3rd c-rod trav.mm: 4.00
            1/min : 1330...1360
  Speed
4th speed 1/min: 1500
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 20...28
Setting point w/out aux. spring
           1/min : 325
Contr.-rod trav.mm: 5.7
Testing:
Speed
             1/min : 100
C-rod trav.mm min : 19.50
Speed
         1/min : 325
                : 6.10...6.30
: 2.00
C-rod trav.mm
C-rod trav.mm
             1/min : 435...495
Speed
TORQUE CONTROL
Dimension a mm : 1.10
Torque-control curve - 1st version
1st speed 1/min: 1210
  C-rod trav.mm : 10.20...10.30
2nd speed 1/min: 500
C-rod trav.mm: 11.30...11.40
4th speed 1/min: 985
  C-rod trav.mm : 10.80...11.00
FUEL-DELIVERY CHARACTERISTICS
Speed
            1/min : 500
Del.quantity cm3/: 66.5...69.5
1000H.: (64.0...72.0)
Dispersion
              cm3/:-
             1000H.: (7.00)
Remarks:
APPLICATION
```

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS Cam seguence : 1- 3- 4- 2 Note inst. in remarks column Test sheet Edition Superceeded SD ang. spacing  $^{\circ}$  CS: 0-90-180-270 Tolerance + -  $^{\circ}$  : 0.50 (0.75) : MB 3,8 M : 12.09.86 : 3.85 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 874 219 1/mi: 700 1st speed Injection pump Contr.-rod trav.mm: 9.40...9.50 Pump designation : PES4A90D410RS2294 EP type number : 0 410 894 011 Del.quantity cm3/: 4.7...4.8 Governor 100H.: (4.5...5.0) Governor design. : RSV350...750A0C764L Governer no. : 0 420 232 396 Dispersion cm3/:0.3Customer-spec. information Customer : DAIMLER-BENZ 100H.: (0.4) : OM 314 2nd speed 1/min: 350.0 Engine Contr.-rod trav. m: 6.2...6.4 : 30.9 Del.quantity cm3/: 0.5...1.1 100H.: (0.3...1.3) 1st version kW 1/min: 1500 Speed cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38 . . . 42 Control-lever position Degree: -3 1/min: 800 Overflow valve Speed : 1 417 413 000 Cont.-rod travelmm: 0.30...1.00 Inlet press., bar : 1.00 Governor-spring reload Notch setting x : 3,75 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening 1st version pressure, bar : 172...175 1/min: 700 Speed Del.quantity cm3/: 47.0...48.0 1000H.: (45.0...50.0) cm3/ : 3.00 Test inj. tubing : 1 680 750 014 Dispersion 1000H.: (4.50) Outside diameter x Wall thickness HIGHEST RATED SPEED : 6,00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 31...39 Insp. values in parentheses Set constant delivery quant. Testing: per values 1st c-rod trav.mm : 8.40 1/min : 750...755 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min : 788...801 4th speed 1/min : 870.0 START OF DELIVERY Test pressure, bar: 25...27 : 2.15...2.25 : 0.3...1.4 Prestroke mm C-rod trav.mm : (2.10...2.30) Contr.-rod trav.mm: 9.00...12.00 LOWEST RATED SPEED I

F25

Control-lever position degrees: 19...27
Setting point w/out aux. spring
Speed 1/min: 350
Contr.-rod trav.mm: 6.3
Speed 1/min: 350
C-rod trav.mm : 6,20...6,40
C-rod trav.mm : 2.00
Speed 1/min: 385...415

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet Edition Superceeded : MB 3,8 N 14 SD ang. spacing  $^{0}$  CS: 0-90-180-270 Tolerance + -  $^{10}$  : 0.50 (0.75) : 12.09.86 : 10.85 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 874 227 1st speed 1/mi: 1200 Injection pump Pump designation : PES4A90D410RS2570 EP type number : 0 410 894 023 Contr.-rod trav.mm: 10.40...10.50 Governor Del.quantity cm3/ : 4.9...5.0 Governor design. : RSV350...1200A2C1139 100H.: (4.7...5.2) -1L Governer no. : 0 420 232 401 Dispersion cm3/:0.3Customer-spec. information Customer 100H.: (0.2) Engine : OM 314 1/min: 350.0 2nd speed Contr.-rod trav. m: 8.9...9.5 Del.quantity cm3/: 1.1...1.3 1st version kW : 48.0 1/min: 2400 100H.: (0.9...1.5) Speed Dispersion cm3/:0.2TEST BENCH REQUIREMENTS 100H.: (0.4) Calibrating-oil inlet temp. OC SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.79 Governor-spring reload Inlet press., bar : 1.00 Notch setting x : 4.00 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening. 1st version pressure, bar : 172...175 1/min: 1200 Speed Del.quantity cm3/: 49.5...50.5 1000H.: (47.5...52.5) cm3/ : 3.00 Test inj. tubing : 1 680 750 014 Dispersion 1000H.: (2.50) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00x2.00x600 1st version Control-lever (A) Injection pump setting values position degrees: 45...53 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm : 9.40 Speed 1/min: 1235...1240 START OF DELIVERY 2nd c-rod trav.mm : 4.00 Speed 1/min: 1293...1306 3rd c-rod trav.mm: 4.00 Speed 1/min: 1340...1370 Test pressure, bar: 25...27 Prestroke mm : 2.25...2.35 4th speed 1/min: 1450 : (2.20...2.40)

F27

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 350 Speed ~ Contr.-rod trav.mm: 9.20 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.00 Speed 1/min: 350 : 9.10...9.30 : 2.00 C-rod trav.mm C-rod trav.mm 1/min : 535...595 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1200 1st speed C-rod trav.mm : 10.40...10.50 2nd speed 1/min: 500 C-rod trav.mm: 11.80...12.00 3rd speed 1/min: 900 C-rod trav.mm : 11.10...11.50 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 500 Del.quantity cm3/: 45.0....7.0 1000H.: (42.5...49.5) Dispersion cm3/:1000H:: (5.50)
Speed 1/min: 900
Del.quantity cm3/: 49.0...51.0
1000H:: (46.5...53.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet : MB 3.8 N 7
Edition : 12.09.86
Superceeded : 10.85 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 874 232 1st speed 1/mi: 1180 Injection pump Pump designation : PES4A90D410R\$2570 Contr.-rod trav.mm: 11.80...11.90 EP type number : 0 410 894 023 Del.quantity cm3/: 6.3...6.4 Governor Governor design. : RSV350...1200A2C1147 100H.: (6.1...6.6) Governer no. : 0 420 232 402 cm3/:0.2Dispersion Customer-spec. information Customer : DAIMLER-BENZ 100H.: (0.2) Engine : 0M314A 2nd speed 1/min: 350.0 Contr.-rod trav. m: 8.8...9.4 Del.quantity cm3/: 1.1...1.3 1st version kW : 63.0 100H.: (0.9...1.5) cm3/: 0.2 100H.: (0.4) 1/min: 2400 Speed Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar: 1.00 Governor-spring reload Notch setting x : 4.00 Calibrating nozzle-holder assembly : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening 1st version pressure, bar : 172...175 Speed 1/min: 1180 Del.quantity cm3/: 63.5...64.5 1000H.: (61.5...66.5) Dispersion cm3/: 2.00 1000H.: (2.50) Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 45...53 Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.80 Speed 1/min : 1235...1240 2nd c-rod trav.mm : 4.00 per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 Speed 1/min: 1309...1322 3rd c-rod trav.mm: 4.00 : 2.25...2.35 Speed 1/min: 1365...1395 Prestroke mm 4th speed 1/min: 1475 : (2.20...2.40)

G01

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Testing: Speed 1/min : 100 C-rod trav.mm min: 18.00 1/min : 350 Speed 9.00...9.20 mm : 2.00 1/min : 575...635 C-rod trav.mm C-rod trav.mm Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1180 C-rod trav.mm : 11.80...11.90

2nd speed 1/min: 600

C-rod trav.mm : 12.60...12.70 3rd speed 1/min : 900

C-rod trav.mm : 12.10...12.50

## FUEL-DELIVERY CHARACTERISTICS

1/min : 600 Speed Del.quantity cm3/: 57.0...59.0 1000H.: (55.0...61.0) 1000H.: (5.50) Speed 1/min: 900

Del.quantity cm3/: 61.0...63.0 1000H.: (58.5...65.5)

Contr.-rod trav.mm: 9.00...12.00 BOSCH MMJ. PUMP TEST SPECIFICATIONS Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Test sheet Edition Superceeded : MB 3,8 N 10 SD ang. spacing<sup>0</sup>CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) : 12.09.86 Superceeded : 5.84 Calibrating oil : ISO-4113 BASIC SETTING : 0 400 874 237 Combination no. 1st speed 1/mi: 1300 Injection pump Pump designation : PES4A90D410RS2570 Contr.-rod trav.mm: 10.90...11.00 EP type number : 0 410 894 023 Governor Del.quantity cm3/ : 6.0...6.1 Governor design. : RSV350...1300A2C1126 -2L 100H.: (5.8...6.3) : 0 420 232 403 Governer no. Dispersion cm3/:0.3Customer-spec. information Customer : DAIMLER-BENZ 100H.: (0.4) : OM 314 Engine 1/min: 350 2nd speed Contr.-rod trav. m: 8.4...9.0 Del.quantity cm3/: 1.1...1.3 100H.: (0.9...1.5) Dispersion cm3/: 0.2 100H.: (0.4) 1st version kW : 55.0 1/min: 2600 Speed TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Notch setting x : 4.00Inlet press., bar: 1.00 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version pressure, bar : 172...175 1/min: 1300 Speed Del.quantity cm3/: 60.0...61.0 1000H: (58.0...63.0) Dispersion cm3/: 3.00 1000H: (4.50) Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x2.00x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 42...50 Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 9.90 Speed 1/min : 1340...1345 per values \_\_\_\_ 2nd c-rod trav.mm : 4.00 START OF DELIVERY 1/min : 1386...1399 Test pressure, bar: 25...27 3rd c-rod trav.mm : 4.00 : 2.25...2.35 Speed 1/min: 1435...1465 Prestroke mm : (2.20...2.40) 4th speed 1/min : 1550

G03

: 0.30...1.40 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: -Testing: 1/min : 100 Speed C-rod trav.mm min : 19.50 Speed 1/min : 350 C-rod trav.mm : 8.60...8.80 : 2.00 C-rod trav.mm 1/min: 560...620 Speed TORQUE CONTROL Torque-control curve - 1st version
1st speed 1/min: 1300
C-rod trav.mm: 10.90...11.00
2nd speed 1/min: 500
C-rod trav.mm: 11.60...11.80
3rd speed 1/min: 700 C-rod trav.mm : 11.20...11.50 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 500 Del.quantity cm3/: 48.0...52.0 1000H:: (45.5...54.5) Dispersion cm3/: -1000H:: (5.50)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : LIE 5,6 A SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Edition : 12.09.86 Superceeded : 4.86 : ISO-4113 Calibrating oil START OF DELIVERY DIFFERENCE : 0 400 874 238 Combination no. betw.c-rod trav.mm: 8.50...9.50 Difference CS : 4.00...5.00 Injection pump Pump designation : PES4A95D41ORS2685 EP type number : 0 410 894 996 BASIC SETTING Governor : RSV400...1000A1C2187 Governor design. 1/mi: 1000 1st speed Governer no. : 0 420 232 387 Contr.-rod trav.mm: 10.20...10.30 Del.quantity cm3/ : 8.6...8.8 Customer-spec. information Customer : LIEBHERR 100H.: (8.4...9.0) Engine : D904 NA Dispersion cm3/:0.31st version kW : 70.0 Speed 1/min: 2000 100H.: (0.6) 2nd speed 1/min: 400.0 Contrared trav. m: 6.1...6.3 Del.quantity cm3/: 1.0...1.6 100H.: (0.7...1.8) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 40...45 cm3/:0.3Dispersion Overflow valve 100H.: (0.5) : 1 417 413 000 SLEEVE POSITION Control-lever position Inlet press., bar : 1.50 Degree: -3 1/min: 800 Calibrating nozzle-holder Speed : 0 681 343 009 assembly Cont.-rod travelmm: 0.30...0.70 Governor-spring reload Opening pressure, bar : 172...175 Notch setting x : 3.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 008 1st version Outside diameter 1/min: 1000 Speed Del.quantity cm3/ : 86.0...88.0 x Wall thickness : 6.00x2.00x600 1000H.: (84.0...90.0) x Length mm cm3/ : 3.50 Dispersion 1000Ha: (6.00) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED per values \_\_\_\_ 1st version Control-lever START OF DELIVERY position degrees: 45...53 Test pressure, bar: 25...27 Testing: Prestroke mm : 2.70...2.80 1st c-rod trav.mm: 9.20 : (2.65...2.85) Speed 1/min: 1040...1050

**G05** 

2nd c-rod trav.mm: 4.00 Speed 1/min: 1050...1080 3rd c-rod trav.mm: 4.00 Speed 1/min: 1060...1090 4th speed 1/min: 1230 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 17...26 Setting point w/out aux. spring Speed 1/min: 400 Contr.-rod trav.mm: 5.7 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 1/min : 400 Speed C-rod trav.mm : 6.10...6.30 C-rod trav.mm : 2.00 1/min: 450...510 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1000 1st speed C-rod trav.mm : 10.20...10.30 2nd speed 1/min: 550 C-rod trav.mm : 10.20...10.40 5th speed 1/min : 430 C-red trav.mm : 11.40...12.00 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 600 Del.quantity cm3/: 80.5...83.5 1000H.: (78.0...86.0) Remarks:

Contr.-rod trav mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : MB 4,0 B SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) : 22.10.86 : 10.85 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 874 240 1/mi: 1380 1st speed Injection pump
Pump designation : PES4A90D410RS2666
EP type number : 0 410 894 029 Contr.-rod trav.mm: 10.40...10.50 Del.quantity cm3/: 6.3...6.4 Governor Governor design. : RSV300...1400A0C2006 100H.: (6.1...6.6) -1L Governer no. : 0 420 232 449 Dispersion cm3/:0.3Customer-spec. information Customer 100H.: (0.4) : DAIMLER-BENZ 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...8.0 Del.quantity cm3/: 0.6...1.0 100H.: (0.4...1.2) Engine : 0M364 1st version kW : 66.0 1/min: 2800 Speed cm3/: 0.2 100H.: (0.4) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 000 Cont.-rod travelmm: 0.30...0.10 Governor-spring reload Inlet press., bar: 1.00 Notch setting x : 4.50 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version pressure, bar : 172...175 1/min: 1380 Speed Del.quantity cm3/: 63.0...64.0 1000H.: (61.0...66.0) Dispersion cm3/: 3.00 1000H.: (4.50) Test ini. tubing : 1 680 750 015 Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x1.50x600 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 59...67 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm : 9.40 Speed 1/min: 1430...1440 START OF DELIVERY 2nd c-rod trav.mm : 4.00 1/min : 1480...1510 Test pressure, bar: 25...27 Speed 4th speed 1/min: 1575 Prestroke mm : 2.25...2.35 : (2.20...2.40) C-rod trav.mm : 0.30...1.70

**G07** 

LOWEST RATED SPEED I Control-lever position degrees: 24...32 Setting point w/out aux. spring Speed " 1/min : 300 Contra-rod trav.mm: 7.9 Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 300 C-rod trav.mm: 7.80...8.00 C-rod trav.mm: 2.00 1/min: 420...480 Speed SET IDLE AUXILIARY SPRING Contra-rod trav.mm: 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 2nd speed 1/min: 500 C-rod trav.mm : 11.70...11.80 3rd speed 1/min: 900 C-rod trav.mm : 11.10...11.30 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 500 Del.quantity cm3/: 52.0...54.0 1000H:: (49.5...56.5) cm3/:-Dispersion 1000H.: (5.50)

```
Contr.-red trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                    : MB 5,7 M 9
                    : 12.09.86
                                                      SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - * : 0.50 (0.75)
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                      BASIC SETTING
                    : 0 400 876 108
Combination no.
                                                      1st speed
                                                                      1/mi: 1400
Injection pump
Pump designation
                    : PES6A80D410RS2085X
                                                      Contr.-rod trav.mm: 8.50...8.60
EP type number
                    : 0 410 886 045
Governor
                                                      Del.quantity cm3/: 4.1...4.2
                    : RSV350...1400A2C1001
Governor design.
                                                                     100H.: (4.0...4.4)
Governer no. : 0 420 232 464
                                                      Dispersion
                                                                     cm3/:0.2
Customer-spec. information
Customer
                                                                     100H.: (0.3)
                    : 0M352
Engine
                                                      2nd speed
                                                                     1/min: 350.0
                                                      Contr.-rod trav. m: 7.4...7.6
                                                      Del.quantity cm3/: 1.0...1.4
100H.: (0.8...1.5)
Dispersion cm3/: 0.2
100H.: (0.3)
1st version kW : 66.0
              1/min: 2800
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                   Degree: -3
                                                                    17min: 800
Overflow valve
                    : 1 417 413 900
                                                      Cont.-rod travelmm: 0.30...1.00
                                                      Governor-spring reload Notch setting x : 4.00
Inlet press., bar : 1.00
Calibrating nozzle-holder
 assembly
                : 0 681 343 009
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                                                      1st version
pressure, bar : 172...175
                                                      Speed
                                                                    1/min: 1400
                                                      Del.quantity cm3/: 41.5...42.5
1000H.: (40.0...44.0)
Dispersion cm3/: 2.00
1000H.: (3.50)
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                    : 6.00x2.00x600
x Length mm
                                                      1st version
                                                      Control-lever
(A) Injection pump setting values
                                                       position degrees: 46...54
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm: 7.50
    per values ____
                                                                  1/min : 1440...1450
                                                        Speed
START OF DELIVERY
                                                      2nd c-rod trav.mm: 4.00
Test pressure, bar: 25...27
                                                        Speed
                                                                   1/min: 1455...1485
                                                      3rd c-rod trav.mm : 0.30...1.40
                                                                  1/min : 1725
Prestroke mm
                   : 2.15...2.25
                                                        Speed
                    : (2.10...2.30)
                                                      4th speed
                                                                   1/min: 1545...1575
G09
```

C-rod trav.mm : 4.00

SET IDLE CONTROL-LEVER

Control-lever

position degrees: -

LOWEST RATED SPEED I

Setting point w/out aux. spring Speed 1/min: 350 Contr.-rod trav.mm: 7.5

Testing:

Speed 1/min : 100 C-rod trav.mm min : 19.50 C-rod trav.mm : 2.00 Speed 1/min : 730...790

TORQUE CONTROL

Dimension a mm : 0.50

Torque-control curve - 1st version
1st speed 1/min: 1400
C-rod trav.mm: 8.50...8.60
2nd speed 1/min: 500
C-rod trav.mm: 9.00...9.10
3rd speed 1/min: 700
C-rod trav.mm: 8.70...8.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 500 Del.quantity cm3/: 40.5...42.5 1000H.: (38.5...44.5)

Remarks: **APPLICATION** 

Unimog

```
: 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : MB 5,7 M 10
Test sheet
                    : 12.09.86
Edition
Superceeded
                                                      BASIC SETTING
Calibrating oil
                  : ISO-4113
Combination no.
                    : 0 400 876 188
                                                                     1/mi: 1400
                                                      1st speed
Injection pump
                                                      Contr.-rod trav.mm: 9.00...9.10
Pump designation
                    : PES6A80D410RS2085X
EP type number
                    : 0 410 886 045
                                                      Del.quantity cm3/ : 5.2...5.3
Governor
                    : RSV350...1400A2C1052
                                                                    100H.: (5.0...5.4)
Governor design.
Governer no. : 0 420 232 406
                                                                    cm3/:0.2
                                                      Dispersion
                                                                    100H.: (0.4)
Customer-spec. information
Customer
                                                                    1/min: 350.0
                                                      2nd speed
Engine
                    : 0M352
                                                      Contr.-rod trav. m: 6.6...7.2
                                                      Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.3)
1st version kW : 80.9
                                                                    cm3/: 0.2
100H.: (0.3)
Speed
              1/min: 2800
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                      SLEEVE POSITION
Calibrating-oil inlet temp. OC
                                                      Control-lever position
                    : 38...42
                                                                   Degree: -3
                                                                    17min: 800
                                                      Speed
Overflow valve
                                                      Cont.-rod travelmm: 0.30...0.70
                    : 1 417 413 000
                                                      Governor-spring reload Notch setting x : 4.00
Inlet press., bar : 1.00
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                      1st version
                                                                    1/min: 1400
Opening
                                                      Speed
                                                      Del.quantity cm3/: 52.0...53.0
1000H: (50.5...54.5)
Dispersion cm3/: 2.50
1000H: (4.00)
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 014
Outside diameter
                                                      HIGHEST RATED SPEED
x Wall thickness
                                                      1st version
x Length mm
                    : 6.00x2.00x600
                                                      Control-lever
                                                       position degrees: 46...54
(A) Injection pump setting values
                                                      Testing:
    Insp. values in parentheses
    Set constant delivery quant.
                                                      1st c-rod trav.mm: 8.00
                                                      Speed 1/min: 1435...1440
2nd c-rod trav.mm: 4.00
    per values ____
START OF DELIVERY
                                                        Speed
                                                                   1/min : 1473...1486
                                                      3rd c-rod trav.mm : 0.30...1.40
                    : 2.15...2.25
                                                                   1/min : 1680
Prestroke mm
                                                        Speed
                                                        th speed 1/min: 1500...1530
C-rod trav.mm: 4.00
                    : (2.10...2.30)
                                                      4th speed
Contr.-rod trav.mm: 9.00...12.00
G11
```

LOWEST RATED SPEED I Control-lever position degrees: -Setting point w/out aux. spring 1/min : 350 Speed Contra-rod trav.mm: 6.90 Testing: Speed 1/min : 100 C-rod trav.mm min: 19.00 Speed 1/min: 350 C-rod trav.mm : 6.80...7.00 : 2.00 C-rod trav.mm 1/min: 600...660 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1400 C-rod trav.mm: 9.00...9.10 2nd speed 1/min: 500 C-rod trav.mm : 9.80...9.90 4th speed 1/min: 950 C-rod trav.mm : 9.10...9.40 FUEL-DELIVERY CHARACTERISTICS 1/min : 500 Speed Del.quantity cm3/: 47.0...49.0 1000H:: (45.0...51.0) Speed 1/min: 850 Del.quantity cm3/: 50.0...53.0 1000H.: (48.0...55.0) Remarks:

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
Edition
Superceeded
                    : KHD 9,6 K 1
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : 12.09.86
                   : 9.85
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                   : 0 400 876 198
                                                      ist speed
                                                                    1/mi: 1140
Injection pump
                                                      Contr.-rod trav.mm: 10.00...10.10
Pump designation : PES6A95D41ORS2416
EP type number
                    : 0 410 896 961
Governor
                                                      Del.quantity cm3/: 9.8...10.0
Governor design. : RSV300...1150A8C616D
                                                                    100H.: (9.6...10.2)
Governer no. : 0 420 232 323
                                                                    cm3/: 0.3
                                                      Dispersion
Customer-spec. information
Customer
                                                                    100H.: (0.6)
Engine
                    : F6L413FR
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod tray. m: 5.9...6.1
                                                      Del.quantity cm3/: 1.4...2.0
1st version kW : 140.0
                                                                    100H.: (1.1...2.2)
Speed
              1/min: 2300
                                                                    cm3/: 0.3
100H.: (0.5)
                                                      Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 000
                                                      Cont.-rod travelmm: 0.30...0.70
                                                      Governor-spring reload
Inlet press., bar: 1.00
                                                      Notch setting x : 5.75
Calibrating nozzle-holder
             : 0 681 343 009
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                                                      1st version
 pressure, bar : 172...175
                                                                    1/min: 1140
                                                      Speed
                                                     Del.quantity cm3/: 98.0...100.0
1000H.: (96.0...102.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                    : 6.00x2.00x600
x Length mm
                                                      1st version
                                                      Control-lever
(A) Injection pump setting values
                                                       position degrees: 54...62
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
    per values ____
                                                      1st c-rod trav.mm : 9.00
                                                        Speed 1/min: 1180...1190
START OF DELIVERY
                                                      2nd c-rod trav.mm : 4.00
                                                     Speed 1/min: 1215...1245
3rd c-rod trav.mm: 4,00
Test pressure, bar: 25...27
                                                        Speed 1/min: 1250...1280
Prestroke mm
                   : 1.90...2.00
                                                      4th speed
                    : (1.85...2.05)
                                                                   1/min : 1410
G13
```

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 20...28 Testing: Speed 1/min: 100

C-rod trav.mm min: 19.50 Speed 1/min: 300

C-rod trav.mm : 5.90...6.10 C-rod trav.mm : 2.00 Speed 1/min : 535...595

TORQUE CONTROL

Dimension a mm : 0.40

Torque-control curve - 1st version

1st speed 1/min: 1140

C-rod trav.mm : 10.00...10.10

2nd speed 1/min: 500 C-rod trav.mm: 10.40...10.50 4th speed 1/min: 750 C-rod trav.mm: 10.20...10.30

FUEL-DELIVERY CHARACTERISTICS

1/min : 650 Speed

Del.quantity cm3/: 93.5...96.5 1000H.: (91.0...99.0)

Remarks: **APPLICATION** 

Installation 2300

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                    : MB 5,7 Q 18
                    : 12.09.86
                                                       SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       BASIC SETTING
                    : 0 400 876 218
Combination no.
                                                       1st speed
                                                                       1/mi: 1400
Injection pump
Pump designation : PES6A90D410RS2293
                                                       Contr.-rod trav.mm: 9.70...9.80
EP type number
                    : 0 410 896 031
Governor
                                                       Del.quantity cm3/: 6.3...6.4
                    : RSV350...1400A0C1080
Governor design.
                                                                      100H.: (6.1...6.6)
Governer no. : 0 420 232 408
                                                       Dispersion
                                                                      cm3/:0.3
Customer-spec. information
Customer
                                                                      100H.: (0.4)
Engine
                    : OM 352
                                                                      1/min: 350.0
                                                       2nd speed
                                                       Contr.-rod trav. m: 6.6...7.2
                                                       Del.quantity cm3/: 1.0...1.2
100H:: (0.8...1.4)
Dispersion cm3/: 0.2
100H:: (0.4)
1st version kW : 92.0
              1/min: 2800
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                       SLEEVE POSITION
                    : 38...42
                                                       Control-lever position
                                                                    Degree: -3
Overflow valve
                                                                     17min: 800
                    : 1 417 413 000
                                                       Cont.-rod travelmm: 0.30...1.00
Inlet press., bar: 1.00
                                                       Governor-spring reload
                                                       Notch setting x : 4.00
Calibrating nozzle-holder
 assembly
             : 0 681 343 009
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                                                       1st version
 pressure, bar : 172...175
                                                       Speed
                                                                     1/min: 1400
                                                       Del.quantity cm3/: 63.0...64.0
1000H.: (61.0...66.0)
Dispersion cm3/: 3.00
1000H.: (4.50)
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
                                                       HIGHEST RATED SPEED
                    : 6.00x2.00x600
x Length mm
                                                       1st version
                                                       Control-lever
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.
                                                        position degrees: 68...76
                                                       Testing:
    per values
                                                       1st c-rod trav.mm: 8,70
                                                         Speed 1/min: 1440...1445
                                                       2nd c-rod trav.mm: 4,00
START OF DELIVERY
                                                                   1/min: 1473...1486
Test pressure, bar: 25...27
                                                       3rd c-rod trav.mm : 0.30...1.70
Prestroke mm
                                                         Speed 1/min: 1600
                   : 2.15...2.25
                    : (2.10...2.30)
                                                       4th speed
                                                                    1/min: 1510...1540
G15
```

```
C-rod trav.mm : 4.00
LOWEST RATED SPEED I
Control-lever
 position degrees: -
Testing:
Speed
               1/min : 100
C-rod trav.mm min : 19.50
              1/min : 350
Speed
C-rod trav.mm : 6.80...7.00
C-rod trav.mm : 2.00
Speed 1/min : 500...560
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1400
C-rod trav.mm: 9.70...9.80
2nd speed 1/min: 600
  C-rod trav.mm : 9.80...10.00
FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 600
Del.quantity cm3/: 51.0...53.0
1000H: (49.0...55.0)
Speed 1/min: 900
Del.quantity cm3/: 57.0...59.0
1000H.: (54.5...61.5)
```

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                     : MB 5,7 Q 4
: 12.09.86
Test sheet
Edition
Superceeded
                                                         SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : 8.85
Calibrating oil : ISO-4113
                                                         BASIC SETTING
                     : 0 400 876 256
Combination no.
                                                         1st speed
                                                                         1/mi: 1300
Injection pump
Pump designation : PES6A90D410RS2293
EP type number : 0 410 896 031
                                                         Contr.-rod trav.mm: 10.60...10.70
                                                        Del.quantity cm3/: 7.1...7.2
Governor
                     : RSV350...1300A0C1101
Governor design.
                                                                       100H.: (6.9...7.4)
Governer no. : 0 420 232 410
                                                                       cm3/:0.3
                                                         Dispersion
Customer-spec. information
Customer
                                                                        100H.: (0.4)
Engine
                     : 0M352A
                                                         2nd speed
                                                                       1/min: 350.0
                                                         Contr.-rod trav. m: 6.7...7.3
1st version kW : 110.3
                                                        Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.4)
               1/min: 2600
Speed
                                                                       cm3/: 0.2
100H.: (0.4)
                                                         Dispersion
TEST BENCH REQUIREMENTS
                                                         SLEEVE POSITION
Calibrating-oil inlet temp. C
                     : 38 ... 42
                                                         Control-lever position
                                                                      Degree: -3
1/min: 800
Overflow valve
                     : 1 417 413 000
                                                        Cont.-rod travelmm: 0.30...0.70
Inlet press., bar: 1.00
                                                        Governor-spring reload
                                                        Notch setting x : 4.00
Calibrating nozzle-holder
               : 0 681 343 009
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                        1st version
 pressure, bar : 172...175
                                                        Speed
                                                                       1/min: 1300
                                                        Del.quantity cm3/: 71.0...72.0
1000H.: (69.0...74.0)
                                                                      cm3/ : 3.00
1000H.: (4.50)
Test inj. tubing : 1 680 750 014
                                                        Dispersion
Outside diameter x Wall thickness
                                                        HIGHEST RATED SPEED
                     : 6.00X2.00X600
x Length mm
                                                        1st version
                                                        Control-lever
(A) Injection pump setting values
                                                         position degrees: 65...73
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
                                                        1st c-rod trav.mm: 9,60
Speed 1/min: 1335...1340
2nd c-rod trav.mm: 4.00
    per values ____
START OF DELIVERY
                                                                     1/min: 1383...1396
Test pressure, bar: 25...27
                                                          Speed
                                                        3rd c-rod trav.mm : 0.30.,.1.40
                   : 2.15...2.25
: (2.10...2.30)
Prestroke mm
                                                                     1/min : 1500
                                                          Speed
                                                        4th speed
                                                                      1/min : 1415...1445
G17
```

Remarks: APPLICATION

Unimog

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                   : MB 5.7 Q 3
: 12.09.86
Test sheet
                                                         SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
Edition
Superceeded
Superceeded : 9.85
Calibrating oil : ISO-4113
                                                         BASIC SETTING
Combination no. : 0 400 876 260
                                                                         1/mi: 1300
                                                         1st speed
Injection pump
Pump designation : PES6A90D410RS2293
                                                         Contr.-rod trav.mm: 10.00...10.10
EP type number
                     : 0 410 896 031
                                                         Del.quantity cm3/ : 6.7...6.8
Governor
                     : RSV350...1300A0C1105
Governor design,
                                                                        100H.: (6.5...7.0)
                     : 0 420 232 413
Governer no.
                                                                        cm3/:0.3
                                                         Dispersion
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                        100H.: (0.4)
                     : OM 352 A
Engine
                                                                        1/min: 350.0
                                                         2nd speed
                                                         Contr.-rod trav. m: 6.6...7.2
                                                         Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.4)
Dispersion cm3/: 0.2
100H.: (0.4)
1st version kW : 91.9
Speed
               1/min: 2600
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                         SLEEVE POSITION
                     : 38...42
                                                                        1/min: 800
                                                         Speed
                                                         Cont.-rod travelmm: 0.30...1.00
Overflow valve
                     : 1 417 413 000
                                                         Governor-spring reload
                                                         Notch setting x : 5.00
Inlet press., bar : 1.00
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                         1st version
                                                                        1/min: 1300
                                                         Speed
                                                        Del.quantity cm3/: 67.0...68.0
1000H:: (65.0...70.0)
Dispersion cm3/: 3.00
Opening
 pressure, bar : 172...175
                                                                       1000H.: (4.50)
Test inj. tubing : 1 680 750 003
                                                         HIGHEST RATED SPEED
Outside diameter
                                                         1st version
                                                         Control-lever
x Wall thickness
                    : 6.00x2.00x600
x Length mm
                                                          position degrees: 61...69
(A) Injection pump setting values
                                                         Testing:
    Insp. values in parentheses
Set constant delivery quant.
                                                         1st c-rod trav.mm : 9.00
Speed 1/min : 1340...1345
2nd c-rod trav.mm : 4.00
    per values ____
                                                         Speed 1/min: 1380...1393
3rd c-rod trav.mm: 0.30...1.70
START OF DELIVERY
Test pressure, bar: 25...27
                                                           Speed
                                                                      1/min : 1540
                                                         4th speed 1/min: 1410...1440
                 : 2.15...2.25
Prestroke mm
                                                          C-rod trav.mm : 4.00
                     : (2.10...2.30)
```

G19

LOWEST RATED SPEED I Control-lever position degrees: -Testing: Speed 1/min : 100 C-rod trav.mm min: 19.00 1/min : 350 Speed C-rod trav.mm : 6.80...7.00 C-rod trav.mm : 2.00 Speed 1/min : 460...520 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1300 C-rod trav.mm : 10.00...10.10 2nd speed 1/min : 500 C-rod trav.mm : 10.30...10.50 3rd speed 1/min : 750 C-rod trav.mm : 10.30...10.40 4th speed 1/min : 1140 C-rod trav.mm : 10.00...10.10 FUEL-DELIVERY CHARACTERISTICS 1/min : 850 Speed Del.quantity cm3/: 60.0...63.0 1000H:: (57.5...65.5) Remarks: **APPLICATION** 

Unimog

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                    : MB 5,7 S 1
                                                      SD ang, spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : 12.09.86
                   : 9.85
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                    : 0 400 876 263
                                                      1st speed
                                                                     1/mi: 1300
Injection pump
Pump designation : PES6A90D41ORS2293
                                                      Contra-rod trav.mm: 8.70...8.80
EP type number
                    : 0 410 896 031
Governor
                                                      Del.quantity cm3/: 5.0...5.1
                    : RSV350...1300A0C1107
Governor design.
                                                                    100H.: (4.8...5.3)
Governer no.
                   : 0 420 232 415
                                                      Dispersion
                                                                    cm3/:0.3
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                                    100H.: (0.4)
Engine
                    : OM 352
                                                      2nd speed
                                                                    1/min: 350.0
                                                      Contr.-rod trav. m: 6.6...7.2
                                                     Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.4)
1st version kW : 80.9
Speed
              1/min: 2600
                                                                    cm3/:0.2
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.4)
Calibrating-oil inlet temp. °C
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                  Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 000
                                                     Cont.-rod travelmm: 0.30...1.00
Inlet press., bar: 1.00
                                                     Governor-spring reload
                                                     Notch setting x : 4.00
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                                                     1st version
 pressure, bar : 172...175
                                                                    1/min: 1300
                                                     Speed
                                                     Del.quantity cm3/: 50.0...51.0
1000H: (48.0...53.0)
Dispersion cm3/: 3.00
Test inj. tubing
                   : 1 680 750 014
                                                                   1000H.: (4.50)
Outside diameter
x Wall thickness
                                                     HIGHEST RATED SPEED
                    : 6.00X2.00X600
x Length mm
                                                     1st version
                                                     Control-lever
(A) Injection pump setting values
                                                      position degrees: 62...70
    Insp. values in parentheses
    Set constant delivery quant.
                                                     Testing:
                                                     1st c-rod trav.mm : 7.70
Speed 1/min : 1340...1345
    per values ____
START OF DELIVERY
                                                     2nd c-rod trav.mm : 4.00
                                                     Speed 1/min: 1370...1383
3rd c-rod trav.mm: 0.30...1.70
Speed 1/min: 1550
Test pressure, bar: 25...27
Prestroke mm
                   : 2.15...2.25
                    : (2.10...2.30)
                                                                  1/min: 1390...1420
                                                     4th speed
G21
```

C-rod trav.mm : 4.00 LOWEST RATED SPEED I Control-lever position degrees: -Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 350 C-rod trav.mm : 6.80...7.00 C-rod trav.mm : 2.00 Speed 1/min : 485...545 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1300 C-rod trav.mm : 8.70...8.80 2nd speed 1/min : 500 C-rod trav.mm : 9.90...10.00 3rd speed 1/min: 800 C-rod tray.mm : 9.70...9.90 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 500 Del.quantity cm3/: 47.5...49.5 1000H.: (45.0...52.0) Speed 1/min: 900 Del.quantity cm3/: 50.5...53.5 1000H.: (48.0...56.0)

Remarks: APPLICATION

Tractor (tractor engines)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam seguence : 1-5-3-6-2-4
Note inst. in remarks column
Test_sheet
                     : MB 5.7 V 11
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                    : 12.09.86
Edition
Superceeded
                    : 9.85
Calibrating oil : ISO-4113
                                                        BASIC SETTING
Combination no.
                    : 0 400 876 293
                                                                     1/mi: 1400
                                                        1st speed
Injection pump
Pump designation : PES6A90D410RS2596
                                                        Contr.-rod trav.mm: 11.90...12.00
EP type number
                    : 0 410 896 073
Governor
                                                        Del.quantity cm3/: 7.4...7.5
Governor design.
                    : RSV350...1400A0C1141
                                                                       100H.: (7.2...7.7)
                    : 0 420 232 423
Governer no.
                                                                      cm3/:0.3
                                                        Dispersion
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                       100H.: (0.4)
                                                        2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.8...8.4
Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.4)
                    : 0M352A
Engine
1st version kW : 123.0
Speed
               1/min: 2800
                                                                      cm3/: 0.2
100H.: (0.4)
                                                        Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                        SLEEVE POSITION
                                                        Control-lever position
                    : 38...42
                                                                     Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 000
                                                        Cont.-rod travelmm: 0.30...0.70
Inlet press., bar : 1.00
                                                        Governor-spring reload
                                                        Notch setting x : 4.00
Calibrating nozzle-holder
            : 0 681 343 009
 assembly `
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                                                        1st version
 pressure, bar : 172...175
                                                                      1/min: 1400
                                                        Speed
                                                        Charge press. hPa : 700
Del.quantity cm3/ : 74.0...75.0
                                                                     1000H.: (72.0...77.0)
cm3/ : 3.00
1000H.: (4.50)
Test inj. tubing : 1 680 750 014
                                                        Dispersion
Outside diameter x Wall thickness
                    : 6.00x2.00x600
x Length mm
                                                        HIGHEST RATED SPEED
                                                        1st version
(A) Injection pump setting values
                                                        Control-lever
    Insp. values in parentheses
Set constant delivery quant.
                                                        position degrees: 66...74
    per values ____
                                                        Testing:
                                                       1st c-rod trav.mm : 10.90
Speed 1/min : 1435...1440
2nd c-rod trav.mm : 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                          Speed 1/min: 1475...1488
Prestroke mm
                    : 2.00...2.10
                                                        3rd c-rod trav.mm : 4.00
                    : (1.95...2.15)
                                                          Speed 1/min: 1520...1550
G23
```

```
4th speed 1/min: 1680
C-rod trav.mm: 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: -
Testing:
                1/min : 100
Speed
C-rod trav.mm min: 16.00
Speed 1/min: 350
C-rod trav.mm : 8.00...8.20
C-rod trav.mm : 2.00
Speed 1/min: 580...640
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1400
   C-rod trav.mm : 11.90...12.00
2nd speed 1/min: 900
C-rod trav.mm: 13.10...13.20
4th speed 1/min: 1260
   C-rod trav.mm : 11.90...12.00
 compensator (LDA, ADA, ALDA)
1st version
Setting
                1/min : 500
hPa : 700
Speed
Pressure
Contr.-rod trav.mm: 13.10...13.20
Measurement
                1/min : 500
Speed
1st pressure hPa : -
C-rod trav.mm : 11.30...11.40
2nd pressure hPa > : 275
C-rod trav.mm : 11.70...11.80
3rd pressure hPa : 500
   C-rod trav.mm : 12.50...12.70
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 700
                1/min : 900
Speed
Del.quantity cm3/: 75.0...78.0
1000H:: (72.5...80.5)
Charge press. hPa : .
Speed 1/min: 500
Del.quantity cm3/: 50.0...51.0
1000H.: (48.0...53.0)
```

Unlatching at 0.25 bar...0.35 bar.

Remarks: Latching at 0.45 bar...0.55 bar.

**G24** 

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                          Contr.-rod trav.mm: 9.00...12.00
                                                          Cam seguence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                     : MB 5,7 W 9 : 12.09.86
                                                          SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
Superceeded
                     : 8.82
Calibrating oil
                     : ISO-4113
                                                          BASIC SETTING
Combination no.
                     : 0 400 876 301
                                                          1st speed
                                                                          1/mi: 1380
Injection pump
                                                          Contr.-rod trav.mm: 12.40...12.50
Pump designation : PES6A90D410RS2569
EP type number
                     : 0 410 896 071
                                                          Del.quantity cm3/: 6.2...6.3
Governor
Governor design.
                     : RSV350...1400A0B2098
                                                                         100H.: (6.0...6.5)
Governer no.
                     : 0 420 232 249
                                                          Dispersion
                                                                         cm3/:0.3
Customer-spec. information
Customer
                     : DAIMLER-BENZ
                                                                         100H.: (0.4)
                                                         2nd speed 1/min: 350.0
Contr.-rod trav. m: 10.0...10.2
Del.quantity cm3/: 0.9...1.5
Engine
                     : OM 352
1st version kW : 96.0
                                                                         100H.: (0.7...1.7)
cm3/: 0.2
100H.: (0.4)
               1/min: 2800
Speed
                                                          Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                          SLEEVE POSITION
                     : 38...42
                                                          Control-lever position
                                                                       Degree: -3
1/min: 800
Overflow valve
                     : 1 417 413 000
                                                          Cont.-rod travelmm: 0.30...1.00
                                                          Governor-spring reload
Inlet press., bar : 1.00
                                                          Notch setting x : 4.00
Calibrating nozzle-holder
             : 0 681 343 009
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening.
                                                          1st version
 pressure, bar : 172...175
                                                                         1/min: 1380
                                                          Speed
                                                         Del.quantity cm3/: 62.0...63.0
1000H.: (60.0...65.0)
Dispersion cm3/: 3.00
Test inj. tubing : 1 680 750 014
                                                                        1000H.: (4.50)
Outside diameter
x Wall thickness
                                                         HIGHEST RATED SPEED
                     : 6.00x2.00x600
x Length mm
                                                         1st version
                                                         Control-lever
(A) Injection pump setting values
                                                           position degrees: 58...66
    Insp. values in parentheses
Set constant delivery quant.
                                                         Testing:
                                                         1st c-rod trav.mm: 11.40

Speed 1/min: 1420...1430

2nd c-rod trav.mm: 4.00

Speed 1/min: 1500...1530

4th speed 1/min: 1625
    per values
START OF DELIVERY
Test pressure, bar: 25...27
                     : 2.25...2.35
                                                            C-rod trav.mm : 0.30...1.70
Prestroke mm
                     : (2.20...2.40)
```

**G25** 

LOWEST RATED SPEED I Control-lever position degrees: 26...34 Setting point w/out aux. spring 1/min : 350 Speed Contr.-rod trav.mm: 8.0 Testing: Speed 1/min : 100 C-rod trav.mm min: 19.00 Speed 1/min: 350 C-rod trav.mm : 7.90...8.10 C-rod trav.mm : 2.00 Speed 1/min: 470...530 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1380 C-rod trav.mm: 12.40...12.50 2nd speed 1/min: 600 C-rod trav.mm : 13.50...13.60 3rd speed 1/min : 900 C-rod trav.mm : 12.90...13.20 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 900 Del.quantity cm3/: 60.5...63.5 1000H.: (58.0...66.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                    : MB 5.7 V 16
: 12.09.86
Test sheet
Edition
Superceeded
                                                        SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : 10.85
Calibrating oil : ISO-4113
                                                        BASIC SETTING
Combination no.
                    : 0 400 876 310
                                                        1st speed
                                                                        1/mi: 1180
Injection pump
Pump designation : PES6A90D410RS2596
                                                        Contr.-rod trav.mm: 12.10...12.20
EP type number
                    : 0 410 896 073
                                                        Del.quantity cm3/: 7.3...7.4
Governor
Governor design.
                    : RSV350...1200A0C1148
                                                                       100H.: (7.1...7.6)
                      -1L
                    : 0 420 232 456
Governer no.
                                                        Dispersion
                                                                       cm3/:0.3
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                       100H.: (0.5)
                                                        2nd speed 1/min: 350.0
Contr.-rod trav. m: 8.6...8.8
                     : 0M352A
Engine
                                                        Del.quantity cm3/: 1.2...1.6
100H.: (1.0...1.8)
Dispersion cm3/: 0.2
100H.: (0.4)
1st version kW : 110.0
Speed
               1/min: 2400
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                        SLEEVE POSITION
                    : 38...42
                                                        Control-lever position
                                                                     Degree: -3
1/min: 800
Overflow valve
                     : 1 417 413 000
                                                        Cont.-rod travelmm: 0.30...0.70
Inlet press., bar : 1.00
                                                        Governor-spring reload
                                                        Notch setting x : 4.00
Calibrating nozzle-holder
           : 0 681 343 009
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                        1st version
 pressure, bar : 172...175
                                                                      1/min: 1180
                                                        Speed
                                                        Charge press. hPa : 900
                                                        Del.quantity cm3/: 73.0...74.0
1000H:: (71.0...76.0)
Dispersion cm3/: 3.00
1000H:: (5.00)
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
                    : 6.00X2.00X600
                                                        HIGHEST RATED SPEED
x Length mm
                                                       1st version
(A) Injection pump setting values
                                                        Control-lever
    Insp. values in parentheses
Set constant delivery quant.
                                                         position degrees: 65...73
    per values ____
                                                        Testing:
                                                        1st c-rod trav.mm : 11,10
                                                        $peed 1/min: 1240...1245
2nd c-rod trav.mm: 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                                   1/min : 1301...1314
                                                          Speed
                    : 2.00...2.10
                                                       3rd c-rod trav.mm: 4.00
Prestroke mm
                    : (1.95...2.15)
                                                                   1/min: 1335...1365
                                                          Speed
G27
```

4th speed 1/min: 1460 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Testing: Speed 1/min: 100 C-rod trav.mm min : 19.50 1/min : 350 Speed C-rod trav.mm : 8.60...8.80 C-rod trav.mm : 2.00 1/min: 510...570 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1180 1st speed C-rod trav.mm : 12.10...12.20 2nd speed 1/min: 725 : 13.60...13.70 C-rod trav.mm 3rd speed 1/min: 900 C-rod trav.mm : 13.00...13.20 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 900 Contr.-rod trav.mm: 13.50...13.60 Measurement Speed 1/min : 500 1st pressure hPa : 11.50...11.60 C-rod trav.mm 2nd pressure hPa : 450 C-rod trav.mm : 12.60...12.70 : 235 3rd pressure hPa : 12.00...12.20 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 725 Speed Del.quantity cm3/: 80.0...82.0 1000H:: (77.5...84.5) Charge press. hPa : 900 1/min: 900 Speed Del.quantity cm3/ : 74.0...78.0 1000H.: (71.5...80.5) cm3/:Dispersion 1000H.: (5.50) Charge press. hPa : -Speed 1/min: 500 Del.quantity cm3/: 51.0...53.0 1000H.: (49.0.,.55.0)

Remarks:
Latching at 0.75 bar...0.85 bar.

Unlatching at 0.25 bar...0.35 bar.

APPLICATION

Unimog

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                    SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - * : 0.50 (0.75)
                   : MB 5,7 X 9
                   : 12.09.86
Superceeded
                  : 10.85
Calibrating oil
                  : ISO-4113
                                                    BASIC SETTING
Combination no.
                   : 0 400 876 311
                                                                  1/mi: 1250
                                                    1st speed
Injection pump
                                                    Contr.-rod trav.mm: 11.50...11.60
                   : PES6A90D410RS2569
Pump designation
EP type number
                   : 0 410 896 071
                                                    Del.quantity cm3/: 6.7...6.8
Governor
Governor design.
                   : RSV350...1250A0C1130
                                                                 100H.: (6.5...7.0)
                     -1L
Governer no. : 0 420 232 427
                                                   Dispersion
                                                                 cm3/:0.3
Customer-spec. information
                                                                 100H.: (0.4)
Customer
                                                                 1/min: 350.0
                                                    2nd speed
                   1 UM 352
                                                   Contr.-rod trav. m: 8.1...8.7
Engine
                                                   Del.quantity cm3/: 1.0...1.2
1st version kW
                 : 92.0
                                                                 100H.: (0.8...1.4)
                                                                 cm3/: 0.2
100H.: (0.4)
                                                   Dispersion
WEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                   SLEEVE POSITION
                 : 38...42
                                                   Control-lever position
                                                                Degree: -3
1/min: 800
Overflow valve
                                                   Speed
                   : 1 417 413 000
                                                   Cont.-rod travelmm: 0.30...1.00
Inlet press., bar: 1.00
                                                   Governor-spring reload
                                                   Notch setting x : -
Calibrating nozzle-holder
                 : 0 681 343 009
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening.
                                                   1st version
pressure, bar : 172...175
                                                   Speed
                                                                 1/min: 1250
                                                   Del.quantity cm3/: 67.0...68.0
                                                                1000H.: (65.0...70.0)
cm3/ : 3.00
1000H.: (4.50)
Test inj. tubing : 1 680 750 014
                                                   Dispersion
Outside diameter
x Wall thickness
                                                   HIGHEST RATED SPEED
               : 6.00x2.00x600
                                                   1st version
x Length mm
                                                   Control-lever
(A) Injection pump setting values
                                                    position degrees: 56...64
    Insp. values in parentheses
Set constant delivery quant.
                                                   Testing:
    per values ____
                                                   1st c-rod trav.mm: 10.5
                                                                1/min : 1290...1295
                                                     Speed
START OF DELIVERY
                                                   2nd c-rod trav.mm : 4.00
                                                                1/min: 1347...1360
Test pressure, bar: 25...27
                                                     Speed
                                                   3rd c-rod trav.mm : 4.00
                                                                1/min : 410...1450
Prestroke mm
                   : 2.25...2.35
                                                     Speed
                                                                1/min : 1550
                   : (2.20...2.40)
                                                   4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                    C-rod trav.mm : 0.30...1.70
H01
```

## LOWEST RATED SPEED I

Testing:

Speed 1/min: 100 C-rod trav.mm min: 19.00 Speed 1/min: 350 C-rod trav.mm: 8.30...8.50 C-rod trav.mm: 2.00

1/min : 580...640 Speed

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1250 C-rod trav.mm: 11.50...11.60 2nd speed 1/min: 600 C-rod trav.mm: 12.00...12.10

3rd speed 1/min: 1050

C-rod trav.mm : 11.60...11.80

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 600
Del.quantity cm3/: 56.0...58.0
1000H: (53.5...60.5)
Speed 1/min: 850

Del.quantity cm3/: 66.0...68.0 1000H.: (63.5...70,5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
                    : MB 5,7 2 8
                    : 12.09.86
Edition
                   : 9.85
Superceeded
                   : ISO-4193
Calibrating oil
                                                      BASIC SETTING
Combination no.
                   : 0 400 876 316
                                                      1st speed
                                                                     1/mi: 1200
Injection pump
                                                      Contr.-rod trav.mm: 8.40...8.50
Pump designation
                    : PES6A90D410RS2293
EP type number
                    : 0 410 896 031
                                                      Del.quantity cm3/ : 4.4...4.5
Governor
Governor design. : RSV350...1200A0C1101
                                                                    100H.: (4.2...4.7)
                      -1L
                    : 0 420 232 428
                                                                    cm3/:0.3
Governer no.
                                                      Dispersion
Customer-spec. information
                                                                    100H.: (0.4)
Customer
                   : DAIMLER-BENZ
                                                      2nd speed
                                                                    1/min: 350.0
Engine
                                                      Contr.-rod trav. m: 6.9...7.1
                    : 0M 352
                                                     Del.quantity cm3/: 1.0...1.2
100H:: (0.8...1.4)
Dispersion cm3/: 0.2
100H:: (0.4)
                  : 70.0
1st version kW
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                  Degree: -3
Overflow valve
                                                                    17min: 800
                                                     Speed
                    : 1 417 413 000
                                                     Cont.-rod travelmm: 0.30...0.70
Inlet press., bar : 1.00
                                                     Governor-spring reload
                                                     Notch setting x : 6.00
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening.
                                                     1st version
pressure, bar : 172...175
                                                     Speed
                                                                    1/min: 1200
                                                     Det.quantity cm3/: 44.0...45.0
1000H.: (42.0...47.0)
                                                                  cm3/ : 3.00
1000H.: (4,50)
Test inj. tubing : 1 680 750 014
                                                     Dispersion
Outside diameter
                                                     HIGHEST RATED SPEED
x Wall thickness
               : 6.00x2.00x600
x Length mm
                                                     1st version
                                                     Control-lever
(A) Injection pump setting values
                                                      position degrees: 60...68
    Insp. values in parentheses
Set constant delivery quant.
                                                     Testing:
    per values ____
                                                     1st c-rod trav.mm: 7.40
                                                                 1/min : 1235...1240
                                                       Speed
                                                     2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                     Speed 1/min: 1265...1278
3rd c-rod trav.mm: 0.30...1.40
Test pressure, bar: 25...27
                                                                 1/min : 1400
Prestroke mm
                    : 2.15...2.25
                                                       Speed
                                                                  1/min : 1295...1325
                    : (2.10...2.30)
                                                     4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                       C-rod trav.mm
                                                                         : 4,00
HO3
```

5th speed 1/min : 1240...1255 C-rod trav.mm : 7.40 LOWEST RATED SPEED I Control-lever position degrees: -Testing: Speed 1/min : 100 C-rod trav.mm min: 19.50 Speed 1/min: 350 C-rod trav.mm: : 7.10...7.30 C-rod trav.mm: : 2.00 Speed 1/min: 455...515 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1200 C-rod trav.mm : 8.40...8.50 2nd speed 1/min: 600 C-rod trav.mm : 9.60...9.70

3rd speed 1/min : 850
C-rod trav.mm : 9.30...9.50

4th speed 1/min : 1000
C-rod trav.mm : 8.70...9.00 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 600 Del.quantity cm3/: 42.0...44.0 1000H.: (39.5...46.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                                                       SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0 : 0.50 (0.75)
                    : KHD 1 G 12
                   : 12.09.86
                   : 10.85
Calibrating oil : ISO-4113
                                                       BASIC SETTING
Combination no. : 0 400 876 320
                                                                       1/mi: 1200
                                                       1st speed
Injection pump
                                                       Contr.-rod trav.mm: 12.40...12.50
Pump designation : PES6A85D41ORS2591
EP type number : 0 410 886 903
                                                       Del.quantity cm3/: 8.5...8.6
Governor
Governor design. : RSV325...1150A8C2020
                                                                      100H.: (8.3...8.8)
Governer no. : 0 420 232 345
                                                       Dispersion
                                                                      cm3/:0.3
Customer-spec. information
Customer
                   : KHD
                                                                      100H.: (0.4)
                                                       2nd speed 1/min: 325.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/: 0.9...1.5
100H.: (0.7...1.7)
                    : BF6L913
Engine
1st version kW : 117.0
Speed
              1/min: 2300
                                                                      cm3/: 0.2
100H.: (0.4)
                                                       Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. <sup>B</sup>C
                                                       SLEEVE POSITION
                    : 38...42
                                                       Control-lever position
                                                                    Degree: -3
1/min: 800
Overflow valve
                                                       Speed
                    : 1 417 413 000
                                                       Cont.-rod travelmm: 0.30...0.70
Inlet press., bar: 1.00
                                                       Governor-spring reload
                                                       Notch setting x : 6.00
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                                                       1st version
pressure, bar : 172...175
                                                       Speed
                                                                      1/min: 1200
                                                       Charge press. hPa: 700
                                                       Del.quantity cm3/: 85.5...86.5
1000H.: (83.5...88.5)
Test inj. tubing : 1 680 750 014
                                                       Dispersion cm3/: 3.00
1000H.: (4.50)
Outside diameter
x Wall thickness
                                                       HIGHEST RATED SPEED
                 : 6.00x2.00x600
x Length mm
                                                       1st version
                                                       Control-lever
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        position degrees: 55...63
    per values ____
                                                       Testing:
                                                       1st c-rod trav.mm : 11.40
                                                       Speed 1/min: 1240...1250
2nd c-rod trav.mm: 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                         Speed
                                                                    1/min: 1295...1325
                    : 2.50...2.60
                                                       3rd c-rod trav.mm : 1350...1380
Prestroke mm
                                                                   1/min : 4.00
                    : (2.45...2.65)
                                                         Speed
Contr.-rod trav.mm: 9.00...12.00
                                                       4th speed
                                                                    1/min : 1515
H05
```

```
C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min: 325
Contr.-rod tray.mm: 7.5
Testing:
            1/min: 100
Speed
C-rod trav.mm min: 19.50
           1/min : 325
Speed
C-rod trav.mm
               : 7.90...8.10
C-rod trav.mm
                  : 2.00
           1/min: 640...700
Speed
TORQUE CONTROL
Dimension a mm : 1.10
Torque-control curve - 1st version
1st speed 1/min: 1200
  C-rod trav.mm : 12.40...12.50
           1/min : 500
2nd speed
  C-rod trav.mm : 13.50...13.60
3rd speed 1/min : 925
  C-rod trav.mm : 12.90...13.10
 compensator (LDA,ADA,ALDA)
1st version
Setting
Speed
            1/min : 500
Pressure
            hPa : 700
Contr.-rod trav.mm: 13.50...13.60
Measurement
Speed
           1/min : 500
1st pressure hPa : -
                  : 12.10...12.20
  C-rod trav.mm
2nd pressure hPa : 280
 C-rod trav.mm : 13.20...13.30
3rd pressure hPa : 105
                  : 12.50...12.70
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
            1/min : 500
Speed
Del.quantity cm3/: 65.0...67.0
            1000H.: (63.0...69.0)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Contr.-rod trav.mm: 9.00...12.00
                                                         Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                     : LIE 8,4 A
                                                         SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Edition
                     : 12.09.86
Superceeded
                     : 4.86
                     : ISO-4113
Calibrating oil
                                                         START OF DELIVERY DIFFERENCE
Combination no.
                     : 0 400 876 322
                                                         betw.c-rod trav.mm: 8.50...9.50
Difference CS: 4.00...5.00
Injection pump
Pump designation
                     : PES6A95D410RS2689
EP type number
                     : 0 410 896 916
                                                         BASIC SETTING
Governor
Governor design.
                     : RSV400...1000A1C2187
                                                                         1/mi: 1000
                                                         1st speed
                     : 0 420 232 387
                                                         Contr.-rod trav.mm: 9.70...9.80
Governer no.
Customer-spec. information
                                                         Del.quantity cm3/: 8.1...8.3
Customer
                     : LIEBHERR
                                                                        100H.: (7.9...8.5)
                     : D906 NA
Engine
                                                         Dispersion
                                                                        cm3/:0.3
1st version kW : 112.0
               1/min: 2000
Speed
                                                                        100H.: (0.6)
                                                        2nd speed 1/min: 400.0

Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/: 1.0...1.6

100H.: (0.7...1.8)

Dispersion cm3/: 0.3
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                     : 40...45
Overflow valve
                                                                        100H.: (0.5)
                     : 1 417 413 000
                                                         SLEEVE POSITION
Inlet press., bar: 1.50
                                                         Control-lever position
                                                                      Degree: 3
1/min: 800
Calibrating nozzle-holder
              : 0 681 343 009
                                                         Cont.-rod travelmm: 0.30...0.70
 assembly
Opening
                                                         Governor-spring reload
                    : 172...175
 pressure, bar
                                                         Notch setting x : 2.50
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 008
                                                         1st version
Outside diameter
                                                                        1/min: 1000
                                                         Speed
                                                        Del.quantity cm3/: 81.0...83.0
1000H.: (79.0...85,0)
Dispersion cm3/: 3.50
1000H.: (6.00)
x Wall thickness
x Length mm
                     : 6.00x2.00x600
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        HIGHEST RATED SPEED
    per values ____
                                                         1st version
                                                         Control-lever
START OF DELIVERY
                                                          position degrees: 46...54
Test pressure, bar: 25...27
                                                         Testing:
                     : 2.70...2.80
                                                         1st c-rod trav.mm : 8.70
Prestroke mm
                     : (2.65...2.85)
                                                                      1/min : 1040...1050
                                                           Speed
H07
```

2nd c-rod trav.mm: 4.00 Speed 1/min: 1045...1075 3rd c-rod trav.mm: 4.00 Speed 1/min: 1065...1095 4th speed 1/min: 1230 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 19...27 Setting point w/out aux. spring 1/min : 400 Speed Contra-rod trav.mm: 6.0 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.50 Speed 1/min : 400 C-rod trav.mm : 6.40...6.60 C-rod trav.mm : 2.00 1/min : 470...530 Speed TORQUE CONTROL Torque-control curve - 1st version st speed 1/min : 1000 C-rod &rav.mm : 9.70...9.80 1st speed 2nd speed 1/min: 550 C-rod trav.mm : 9.70...9.90 5th speed 1/min: 430 C-rod trav.mm : 10.90...11.50 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 600 Del.quantity cm3/: 70.0...73.0 1000H.: (67.5...75.5)

```
Contr.-rod trav.mm: 7.50...10.50
Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                    : DAF 6,2 0 3
                                                      SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - " : 0.50 (0.75)
Edition
                    : 12.09.86
 Superceeded
                   : 10.85
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 400 876 327
 Combination no.
                                                      START OF DELIVERY DIFFERENCE
 Injection pump
Pump designation
                    : PES6A95D32ORS2693
                                                      betw.c-rod trav.mm: 8.50...9.50
                                                      & c-rod tray max. : 21.0
Difference CS : 2.50...3.50
EP type number
                    : 0 410 896 914
Governor
                    : RSV300...1300A0C2195
Governor design.
                                                      BASIC SETTING
Governer no. : 0 420 233 200
                                                                     1/mi: 850
                                                      1st speed
Customer-spec. information
                                                      Contr.-rod trav.mm: 11.50...11.60
Customer
                    : DNT 620
Engine
                                                      Del.quantity cm3/: 7.6...7.7
 1st version kW : 130.0
                                                                    100H.: (7.4...7.9)
Speed
               1/min: 2600
                                                      Dispersion
                                                                    cm3/:0.3
 TEST BENCH REQUIREMENTS
                                                                    100H.: (0.4)
Calibrating-oil inlet temp. C
                    : 38...42
                                                      2nd speed
                                                                    1/min: 300.0
                                                      Contr.-rod trav. m: 6.1...6.3
Overflow valve
                                                      Del.quantity cm3/: 0.7......1
                                                                    100H.: (0.4...1.3) cm3/: 0.3
                    : 1 417 413 000
                                                      Dispersion
                                                                    100H.: (0.5)
Inlet press., bar: 1.50
                                                      SLEEVE POSITION
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Opening
                                                      Speed
 pressure, bar : 172...175
                                                      Cont.-rod travelmm: 0.30...0.70
                                                      Governor-spring reload
Test inj. tubing : 1 680 750 015
                                                      Notch setting x : 6.00
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
x Length mm
                                                      1st version
                                                                    1/min: 850
                                                      Speed
                                                      Charge press. hPa : 700
 (A) Injection pump setting values
                                                      Del.quantity cm3/: 76.5...77.5
1000H:: (74.5...79.5)
Dispersion cm3/: 3.50
1000H:: (4.50)
     Insp. values in parentheses
    Set constant/delivery quant.
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
                                                      HIGHEST RATED SPEED
                                                      1st version
Prestroke mm
                  : 2.00...2.10
                                                      Control-lever
                                                       position degrees: 56...64
                    : (1.95...2.15)
```

H09

Testing: 1st c-rod trav.mm: 9.70 Speed 1/min: 1340...1350 2nd c-rod trav.mm : 4.00 1/min : 1400...1430 Speed 3rd c-rod trav.mm: 4.00 1/min: 1430...1460 Speed 4th speed 1/min: 1570 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 25...33 Setting point w/out aux. spring 1/min : 300 Contr.-rod trav.mm: 5.9 1/min : 300 Speed C-rod trav.mm : 6.30...6.50 C-rod trav.mm : 2.00 Speed 1/min : 590...650 TORQUE CONTROL Dimension a mm : 0.80 Torque-control curve - 1st version 1st speed 1/min : 1290 C-rod trav.mm : 10.70...10.80 1/min : 500 2nd speed C-rod trav.mm : 11.50...11.60 4th speed 1/min: 1050 C-rod trav.mm : 10.90...11.10 compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 600 hPa : 700 Pressure Contr.-rod trav.mm: 11.50...11.60 Measurement 1/min: 600 Speed 1st pressure hPa : -C-rod trav.mm : 11.20...11.40 2nd pressure hPa : 250 : 11.40...11.50 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : 700 Speed 1/min: 1290 Del.quantity cm3/: 72.0...74.0 1000H.: (69.5...76.5) Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 65.5...66.5 1000H.: (63.5...68.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Noté inst. in remarks column

Test sheet Edition : MB 6,0 C : 12,09 86 Superceeded : 10.35 Calibrating oil : IC 4.13

: 0 40/ 876 331 Combination no.

Injection pump

Pump designation : PES6A90D410RS2710 EP type number : 0 410 896 082

Governor

Governor design. : RSV300...1400A0C2006

-2L

: 0 420 232 453 Governer no.

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 366 Engine

1st version kW : 100.0 Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2.25...2.35 Prestroke mm

: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) BASIC SETTING 1st speed 1/mi: 1380 Contr.-rod trav.mm: 10.70...10.80 Del.quantity cm3/ : 6.5...6.6 100H.: (6.3...6.8) cm3/:0.3Dispersion 100H.: (0.4) 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.0...8.2 Del.quantity cm3/: 0.6...1.0 100H.: (0.4...1.2) Dispersion cm3/: 0.2 100H.: (0.4) SLEEVE POSITION Control-lever position Degree: -3 17min: 800 Cont.-rod travelmm: 0.30...1.00 Governor-spring reload Notch setting x : 4.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1380 Speed Del.quantity cm3/: 65.0...66.0 1000H: (63.0...68.0) Dispersion cm3/: 3.00 1000H.: (4.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 57...65 Testing: 1st c-rod trav.mm: 9.70 Speed 1/min: 1430...1440 2nd c-rod trav.mm : 4.00 Speed 1/min: 1490...1520 4th speed 1/min: 1650 C-rod tray.mm : 0.30...1.70

LOWEST RATED SPEED I Control-lever position degrees: 24...32 Setting point w/out aux. spring 1/min : 300 Speed Contra-rod trav.mm: 8.1 Testing: 1/min : 100 Speed Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 300 C-rod trav.mm: 8.00...8.20 C-rod trav.mm: 2.00 1/min: 420...480 Speed SET IDLE AUXILIARY SPRING Contra-rod travamm: 2.00 TORQUE CONTROL Torque-control curve - 1st version t speed 1/min : 1380 C-rod trav.mm : 10.70...10.80 1st speed 2nd speed 1/min: 500 C-rod trav.mm : 11.80...11.90 3rd speed 1/min: 900 C-rod trav.mm : 11.30...11.50 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 500
Del.quantity cm3/: 53.0...55.0
1000H: (50.5...57.5)
1000H: (5.50)

BOSCH INJ. PUMP TEST SPECIFICATIONS	Contrrod trav.mm: 7.5010.50 Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column	l cam sequence . 1 3 3 0 2 -
Test sheet : DAF 6,2 0 2 Edition : 12.09.86 Superceeded : 10.85 Calibrating oil : ISO-4113  Combination no. : 0 400 876 332	SD ang. spacing CS: 0-60-120-180-240-300
	START OF DELIVERY DIFFERENCE
Injection pump Pump designation : PES6A95D32ORS2693 EP type number : 0 410 896 914 Governor Governor design. : RSV3001300A0C2206	betw.c-rod trav.mm: 8.509.50 8 c-rod trav max.: 21.0 Difference 0 CS : 2.503.50
R Governer no. : 0 420 233 204	BASIC SETTING
	1 1st speed 1/mi: 850
Customer-spec. information Customer : DAF	Contrrod trav.mm: 10.8010.90
Engine : DNTD 620	Del.quantity cm3/: 6.46.6
1st version kW : 110.0 Speed 1/min: 2600	100H.: (6.26.8)
TEST BENCH REQUIREMENTS	Dispersion cm3/: 0.3
	100H.: (0.6)
Calibrating-oil inlet temp. °C : 3842	I 2nd speed 1/min: 300.0 I Contrrod trav. m: 6.36.5
Overflow valve : 1 417 413 000	<pre>l Del.quantity cm3/: 0.71.1 l</pre>
Inlet press., bar : 1.50	1 100H.: (0.5)
Calibrating nozzle-holder #ssembly : 0 681 343 009	SLEEVE POSITION Control-lever position Degree: -3
Opening : 172175	Speed 17min: 800   Controd travelmm: 0.300.70 
Test inj. tubing : 1 680 750 015	Governor-spring reload   Notch setting x : 5.50
Qutside diameter x Wall thickness	FULL-LOAD DELIV. AT FULL-LOAD STOP
x Length mm : 6.00x1.50x600	l 1st version   Speed 1/min: 850
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values	Del.quantity.cm3/: 64.066.0 1000H.: (62.068.0) Dispersion cm3/: 3.50 1000H.: (6.00)
START OF DELIVERY Test pressure, bar: 2527	HIGHEST RATED SPEED I 1st version Control-lever
Prestroke mm : 2.002.10 : (1.952.15)	position degrees: 5361

H14

Testing: 1st c-rod trav.mm: 9.20 1/min : 1340...1350 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1400...1430 3rd c-rod trav.mm: 4.00 Speed 1/min: 1430...1460 4th speed 1/min: 1570 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 25...33 Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 5.9 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 Speed 1/min: 300 C-rod trav.mm : 6.30...6.50 mm : 2.00 1/min : 590...650 C-rod trav.mm Speed TORQUE CONTROL Dimension a mm : 0.60 Torque-control curve - 1st version 1st speed 1/min : 1290 C-rod trav.mm : 10.20...10.40 2nd speed 1/min: 500 C-rod trav.mm : 10.80...10.90 4th speed 1/min : 1005 C-rod trav.mm : 10.50...10.70 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 1290 Del.quantity cm3/: 69.0...71.0 1000H.: (66.5...73.5) Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Contr.-rod trav.mm: 7.50...10.50
                                                      Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                    : DAF 6.2 0 1
Test sheet
                    : 12.10.86
                                                      SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - * : 0.50 (0.75)
Edition
Superceeded
                    : 4.86
                   : ISO-4113
Calibrating oil
                                                      SD mark cyl. no. : 1
Combination no.
                   : 0 400 876 333
                                                      START OF DELIVERY DIFFERENCE
Injection pump
Pump designation
                    : PES6A95D32ORS2693Z
                                                      betw.c-rod trav.mm: 8.50...9.50
EP type number
                                                      & c-rod tray max. : 21.0
Difference ° CS : 2.50...3.50
                    : 0 410 896 913
Governor
                    : RSV300...1300A0C2195
Governor design.
                                                      BASIC SETTING
                    : 0 420 233 200
Governer no.
                                                                     1/mi: 850
                                                      1st speed
Customer-spec. information
Customer
                                                      Contr.-rod trav.mm: 12.20...12.30
Engine
                    : DNS 620
                                                      Del.quantity cm3/: 8.7...8.9
1st version kW : 150.0
                                                                    100H.: (8.5...9.1)
Speed
              1/min: 2600
                                                                    cm3/:0.3
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.6)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.3...6.5
                                                     Del.quantity cm3/: 0.7...1.1
Overflow valve
                    : 1 417 413 000
                                                                    100H.: (0.4...1.3)
                                                                    cm3/: 0.3
100H.: (0.5)
                                                     Dispersion
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                      SLEEVE POSITION
              : 0 681 343 009
 assembly
                                                      Control-lever position
                                                                  Degree: -3
1/min: 800
Opening
                                                      Speed
                                                     Cont.-rod travelmm: 0.30...0.70
 pressure, bar : 172...175
                                                     Governor-spring reload
Test inj. tubing : 1 680 750 015
                                                     Notch setting x : 5.50
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                     1st version
                                                                    1/min: 850
                                                      Speed
                                                     Charge press. hPa : 700
(A) Injection pump setting values
                                                     Del.quantity cm3/: 87.0...89.0
1000H: (85.0...91.0)
Dispersion cm3/: 3.50
1000H: (6.00)
    Insp. values in parentheses
Set constant delivery quant.
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
                                                     HIGHEST RATED SPEED
                                                     1st version
Prestroke mm
                  : 2.00...2.10
                                                     Control-lever
                   : (1.95...2.15)
                                                      position degrees: 54...62
H16
```

Testing: 1st c-rod trav.mm : 10.70 1/min : 1340...1350 2nd c-rod trav.mm : 4,00 Speed 1/min : 1410...1440 3rd c-rod trav.mm : 4.00 1/min : 1430...1460 1/min : 1595 Speed 4th speed C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 23...31 Setting point w/out aux. spring Speed 1/min : 300 Contr.-rod trav.mm: 5.9 Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 300 C-rod trav.mm : 6.30...6.50 : 2.00 C-rod trav.mm 1/min : 570...630 Speed TORQUE CONTROL Dimension a mm : 0.60 Torque-control curve - 1st version t speed 1/min: 1290 C-rod trav.mm: 11.70...11.90 id speed 1/min: 500 C-rod trav.mm: 12.20...12.30 1st speed 2nd speed 4th speed 1/min: 1020 C-rod trav.mm : 11.90...12.10 compensator (LDA,ADA,ALDA) 1st version **Setting** 1/min : 600 Speed hPa : 700 Pressure Contr.-rod trav.mm: 12.20...12.30 Measurement 1/min : 600 Speed 1st pressure hPa : 11.20...11.40 C-red trav.mm 2nd pressure hPa : 290 C-rod trav.mm : 12.00...12.10 3rd pressure hPa : 250 C-rod trav.mm : 11.50...11.70 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min : 1290 Speed

H17

Del.quantity cm3/: 86.0...88.0 1000H.: (83.5...90.5)

Charge press. hPa : -Speed 1/min : 600

Del.quantity cm3/: 65.0...67.0 1000H:: (63.0...69.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6.0 C 3 Edition : 12.09.86

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 400 876 336

Injection pump

Pump designation : PES6A90D410RS2710 EP type number : 0 410 896 082

Governor

: RSV350...1200A1C1154 Governor design.

-1L

Governer no. : 0 420 232 470

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 366 Engine

1st version kW : 81.0 1/min: 2400 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2.25...2.35 Prestroke mm

: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00 Testing: Cam sequence : 1-5-3-6-2-4 Speed SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) BASIC SETTING TORQUE CONTROL 1/mi: 1200 1st speed Contr.-rod trav.mm: 9.80...9.90 Del.quantity cm3/: 5.1...5.2 100H.: (4.9...5.4) cm3/:0.3Dispersion 100H.: (0.4) Speed Del.quantity cm3/: 48.0...50.0 1000H:: (45.5...52.5) 1/min: 350.0 2nd speed Contr.-rod trav. m: 7.8...8.4 Speed Del.quantity cm3/: 0.7...0.9 100H.: (0.5...1.1) Dispersion cm3/: 0.2 100H.: (0.4) SLEEVE POSITION Remarks: Governor-spring reload APPLICATION Notch setting x : 3.75 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Unimog Speed 1/min: 1200 Del.quantity cm3/: 51.0...52.0 1000H.: (49.0...54.0) cm3/ : 3.00 Dispersion 1000H.: (4.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 51...58 Testing: 1st c-rod trav.mm: 8.80 Speed 1/min: 1240...1245 2nd c-rod trav.mm: 4.00 Speed 1/min: 1269...1282 3rd c-rod trav.mm: 4.00 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I

1/min : 100 C-rod trav.mm min : 19.50 Speed 1/min: 350 C-rod trav.mm : 8.00...8.20 C-rod trav.mm : 2.00 Speed 1/min : 560...620 Torque-control curve - 1st version 1st speed 1/min : 1200 C-rod trav.mm : 9.80...9.90 2nd speed 1/min: 600 C-rod trav.mm : 11.30...11.40 3rd speed 1/min : 850 C-rod trav.mm : 10.70...10.90 4th speed 1/min : 975 C-rod trav.mm : 10.20...10.50 FUEL-DELIVERY CHARACTERISTICS 1/min : 600

1/min: 900 Del.quantity cm3/: 49.0...52.0 1000H.: (46.5...54.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
Note inst. in remarks column
                     : HAN 10,8 F3
Test sheet
                     : 12.09.86
Edition
                                                         SD mark cyl. no. : 1
Superceeded
Calibrating oil : ISO-4113
                                                         START OF DELIVERY DIFFERENCE
Combination no.
                     : 0 401 076 006
                                                         betw.c-rod trav.mm: 8.50...9.50
                                                         & c-rod tray max. : 21.0
Difference CS : 5.50...6.50
Injection pump
Pump designation
                     : PE6A100D320RS3030
EP type number
                     : 0 411 006 018
                                                         BASIC SETTING
Governor
                     : RSV350...1100A8C1119
Governor design.
                                                         1st speed
                                                                         1/mi: 1100
                     : 0 420 233 179
Governer no.
                                                         Contr.-rod trav.mm: 11.50...11.60
                                                         Del.quantity cm3/ : 15.0...15.2
Customer-spec. information
Customer
                     : HANOMAG
                                                                        100H.: (14.8...15.4)
Engine
                     : D963A2
                                                                        cm3/:0.3
                                                         Dispersion
TEST BENCH REQUIREMENTS
                                                                        100H.: (0.6)
Calibrating-oil inlet temp. OC
                                                         2nd speed 1/min: 350.0

Contr.-rod trav. m: 6.8...7.0

Del.quantity cm3/: 1.8...2.4

100H.: (1.6...2.7)

Dispersion cm3/: 0.3
                     : 38...42
Overflow valve
                     : 1 417 413 000
Inlet press., bar: 1.00
                                                                        100H.: (0.5)
Calibrating nozzle-holder
                                                         SLEEVE POSITION
                    : 0 681 343 009
 assembly
                                                         Control-lever position
                                                                      Degree: -3
Opening
                                                                        17min: 800
                                                         Speed
 pressure, bar : 172...175
                                                         Cont.-rod travelmm: 0.30...0.70
                                                         Governor-spring reload
Test inj. tubing : 1 680 750 003
                                                         Notch setting x : 5.50
Outside diameter
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
x Wall thickness
                 : 6.00x2.00x600
x Length mm
                                                         1st version
                                                        Speed 1/min: 1100
Del.quantity cm3/: 150.0...152.0
1000H.: (148.0...154.0)
Dispersion cm3/: 3.00
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quanta
                                                                       1000H.: (6,00)
    per values ____
START OF DELIVERY
                                                         HIGHEST RATED SPEED
Test pressure, bar: 25...27
                                                         1st version
                                                         Control-lever
                    : 1.80...1.90
: (1.75...1.95)
Prestroke mm
                                                          position degrees: 52...60
Contr.-rod trav.mm: 9.00...12.00
                                                         Testing:
Cam sequence : 1-5-3-6-2-4
                                                         1st c-rod trav.mm : 10.50
                                                                      1/min : 1140...1150
                                                           Speed
```

H20

2nd c-rod trav.mm: 4.00 Speed 1/min: 1190...1220 4th speed 1/min: 1355 C-rod trav.mm: 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 20...28 Setting point w/out aux. spring Speed 1/min: 350 Contr.-rod trav.mm: 5.5 Testing: Speed 1/min : 100 C-rod trav.mm min: 19.50
Speed 1/min: 350
C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00 Speed 1/min: 435...495 Speed 1/min: 550 C-rod trav.mm max: 1.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 11.50...11.60 2nd speed 1/min: 550 C-rod trav.mm : 11.50...11.70 3rd speed 1/min: 400 C-rod trav.mm : 12.70...13.30

Remarks: Cold-start testing of RSV governor according to VDT-I-420/114.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet : RAB 10.8 B Edition : 12.09.86 Superceeded : 6.85
                                                       SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0 : 0.50 (0.75)
Superceeded : 6.85
Calibrating oil : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no.
                   : 0 401 246 013
                                                      BASIC SETTING
Injection pump
                                                                      1/mi: 1100
                                                       1st speed
Pump designation : PES6A100D410RS3039
EP type number : 0 411 206 018
                                                      Contr.-rod trav.mm: 13.40...13.50
Governor
Governor design. : RQ200/1100AB1215L
                                                      Del.quantity cm3/: 15.0...15.2
Governer no. : 0 420 200 102
                                                                     100H.: (14.8...15.4)
Customer-spec. information
Customer
                    : RABA
                                                      Dispersion
                                                                     cm3/:0.3
                    : D2156 MTKLL 6
Engine
                                                                     100H.: (0.6)
1st version kW : 206.0
                                                                     1/min: 200.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.7...6.9
Speed
              1/min: 2200
                                                      Del.quantity cm3/: 1.0...1.6
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.7...1.8)
                                                                     cm3/:0.3
                                                      Dispersion
Calibrating-oil inlet temp. C : 38...42
                                                                     100H.: (0.5)
                                                      SLEEVE POSITION
Overflow valve
                                                      Control-lever position
                                                                   Degree: -2
1/min: 600
                    : 1 417 413 000
                                                      Speed
                                                      Cont.-rod travelmm: 19.20...20.80
Inlet press., bar : 1.00
Calibrating nozzle-holder
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
                : 0 681 343 009
 assembly
                                                      1st version
                                                      Speed 1/min: 1100
Charge press. hPa: 700
Del.quantity cm3/: 150.0...152.0
1000H.: (148.0...154.0)
Opening
 pressure, bar : 172...175
                                                                   cm3/ : 3.00
Test inj. tubing : 1 680 750 014
                                                      Dispersion
                                                                    1000H.: (6.00)
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                : 6.00x2.00x600
x Length mm
                                                      Setting point:
(A) Injection pump setting values
                                                                 1/min : 600
    Insp. values in parentheses
Set constant delivery quant.
                                                      Contr.-rod trav.mm: 20.0
    per values ____
                                                      Testing:
                                                      1st c-rod trav.mm : 12.50
                                                      Speed 1/min: 1145...1160
2nd c-rod trav.mm: 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                                  1/min : 1205...1235
                                                        Speed
Prestroke mm
                    : 1.60...1.70
                    : (1.55.,.1.75)
                                                      LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                      Setting point w/out aux. spring
H22
```

```
Speed
           1/min : 200
Contr.-rod trav.mm: 6.8
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 8.20
Speed
            1/min : 200
                 : 6.70...6.90
C-rod trav.mm
C-rod trav.mm
                   : 2.00
Speed
            1/min : 325...365
TORQUE CONTROL
Dimension a mm : 0.55
Torque-control curve - 1st version
1st speed 1/min : 1100
  C-rod trav.mm : 13.50...13.60
            1/min : 600
2nd speed
  C-rod trav.mm : 14.70...14.80
3rd speed 1/min: 880
  C-rod trav.mm : 14.40...14.60
4th speed 1/min: 945
  C-rod trav.mm : 13.80...14.10
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 700
Pressure
Contr.-rod trav.mm: 14.60...14.80
Measurement
            1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm
                   : 11.50...11.60
2nd pressure hPa : 450
C-rod trav.mm : 13.70...13.80
3rd pressure hPa : 325
  G-rod trav.mm
                   : 12.10...12.30
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
            1/min : 750
Speed
Del.quantity cm3/: 163.0...166.0
1000H.: (160.5...168.5)
Charge press. hPa : -
Speed 1/min : 5
            1/min : 500
Del.quantity cm3/: 107.5...110.5
            1000H.: (105.5...112.5)
```

## Note inst. in remarks column

Test sheet Edition Superceeded : MB 19,1 M

: 12.09.86 : 3.81 Calibrating oil : ISO-4113

Combination no. : 0 401 840 071

Injection pump

Pump designation : PE12P110A320LS832 EP type number : Q 411 810 031

Governor

Governor design. : RQV350...1150PA510 Governer no. : 0 421 813 251

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 404 A Engine

1st version kW : 405.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder : 0 681 343 009 assembly

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness : 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

START OF DELIVERY

per values \_\_\_\_

Prestroke mm : 3.20...3.30 : (3.15...3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 12- 1- 5- 9- 8-

SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-

345 Tolerance + - 0 : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1130

Contr.-rod trav.mm: 13.40...13.50

Del.quantity cm3/: 15.0...15.2

100H.: (14.7...15.4)

Dispersion cm3/:0.4

100H.: (0.7)

2nd speed 1/min: 350.0 Contr.-rod trav\_m: 7.0...7.2 Del.quantity cm3/: 1.4...2.0

100H:: (1.1...2.2) cm3/: 0.4

Dispersion

SLEEVE POSITION Control-lever position

Degree: -1 1/min: 1150 Cont.-rod travelmm: 15.20...17.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 1130 Charge press. hPa: 700

Del.quantity cm3/: 150.0...152.0 1000H.: (147.5...154.5)

Dispersion cm3/ : 4.00 1000H.: (7.50)

HIGHEST RATED SPEED 1st version Control-lever

position degrees: 60...70

Testing:

1st c-rod trav.mm : 12.40 Speed 1/min: 1185...1195

2nd c-rod trav.mm : 4.00 Speed 1/min : 1295...1325 4th speed 1/min : 1450

C-rod trav.mm : 0.00...1.00

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 16...24
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 8.60
Speed
            1/min : 350
C-rod trav.mm
                 : 7.00...7.20
C-rod trav.mm
                 : 2.00
            1/min : 610...670
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
hPa : 700
Speed
Pressure
Contr.-rod trav.mm: 13.40...13.50
Measurement
           1/min : 500
Speed
1st pressure hPa
                   : 12.30...12.40
  C-rod trav.mm
2nd pressure hPa : 350
 C-rod trav.mm : 13.10...13.20
3rd pressure hPa : 250
                   : 12.60...12.80
  C-rod trav.mm
SWITCH-OVER POINT
             1/min: 270 (290)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : -
             1/\min : 450
Speed
Del.quantity cm3/: 114.0...118.0
1000H:: (111.0...121.0)
Dispersion cm3/: 6.00
             1000H.: (9.00)
Remarks:
APPLICATION
Ship
```

## Note inst. in remarks column

Test sheet : MB 19,1 N 1 : 12.09.86 Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 401 840 100

Injection pump

Pump designation: PE12P110A320LS854

EP type number : 0 411 810 044 Governor

Governor design. : RQ1150PA310R Governer no. : 0 421 801 071

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M404A Engine

1st version kW : 386.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C : 38...42

Overflow valve

: 1 417 413 025

: 172...175

Inlet press., bar: 1.50

quantity min. 1/h: 150...170

Calibrating nozzle-holder

: 0 681 343 009 assembly Opening.

pressure, bar Outside diameter

x Wall thickness : 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

: 3.20...3.30 : (3.15...3.35) Prestroke mm

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 12- 1- 5- 9- 8- 3

SD ang. spacing CS: 0-45-60-105-120-155-180-225-240-285-300-

345 Tolerance + - 0 : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed 1/mi: 1100

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm3/: 14.0...14.2

100H.: (13.7...14.4)

cm3/:0.4Dispersion

100H.: (0.7)

2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.4...7.6 Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.2) cm3/: 0.4 Dispersion 100H.: (-)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1080 Sleeve travel mm: 2.20...2.40

2nd speed 1/min: 1160
Sleeve travel mm: 5.70...5,90
3rd speed 1/min: 1240
Sleeve travel mm: 8.50...8.70

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

1/min: 1100 Speed

Del.quantity cm3/: 140.0...143.0 1000H.: (137.5...144.5) Dispersion cm3/: 4.00

1000H.: (7.50)

HIGHEST RATED SPEED 1st version

Control-lever position degrees: 27...35

Testing:

1st c-rod trav.mm : 11.90 1/min : 1160...1165 Speed

2nd c-rod trav.mm : 5.90 Speed 1/min : 1205...1215 4th speed 1/min : 1300 C-rod trav.mm : 0.00...1.00

Remarks:
APPLICATION

Generator set

## Note inst. in remarks column

Test sheet : MB 19,1 N 2 : 12.09.86 Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 401 840 101

Injection pump

Pump designation : PE12P110A320LS854 EP type number : 0 411 810 044

Governor

Governor design. : RQ1050PA374R : 0 421 801 094 Governer no.

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M404A Engine

1st version kW : 336.0 1/min: 2100 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Over flow

quantity min. 1/h: 150...170

Calibrating nozzle-holder : 0 681 343 009 assembly

Opening pressure, bar : 172...175

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values

Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Prestroke mm : 3.20...3.30 : (3.15...,3.35)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 12- 1- 5- 9- 8- 3

SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-

345 Tolerance + - 0 : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1/mi: 1000 1st speed

Contr.-rod trav.mm: 12.90...13.00

Del.quantity cm3/: 14.0...14.2

100H.: (13.7...14.4)

cm3/:0.4Dispersion

100H.: (0.7)

2nd speed 1/min: 300.0 Contr.-rod trav m: 7.3...7.5

Del.quantity cm3/: 1.4...2.0 100H:: (1.1...2.2) Dispersion cm3/: 0.4 100H:: (-)

(B) Setting of injection pump with externally-mounted governor

SLEEVE TRAVELS

1st speed 1/min: 1000

Sleeve travel mm: 2.00...2.20 2nd speed 1/min: 1050 Sleeve travel mm: 4.10...4.30

3rd speed 1/min: 1100 Sleeve travel mm: 5.00...5.20 4th speed 1/min: 1150

Sleeve travel mm: 9.40...9.60 FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

1/min: 1000 Speed

Del.quantity cm3/: 140.0...142.0 1000H.: (137.5...144.5) cm3/ : 4.00

Dispersion 1000H.: (7.50)

HIGHEST RATED SPEED 1st version Control-lever

position degrees: 22...30

Testing:

1st c-rod trav.mm : 11.90 Speed 1/min : 1055...1060 2nd c-rod trav.mm : 6.00 Speed 1/min : 1095...1105 4th speed 1/min : 1200 C-rod trav.mm : 0.00...1.0

Remarks: **APPLICATION** 

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS	Prestroke mm :	3.203.30
Note inst. in remarks column 1	Contrrod tray.mm:	(3.153.35) 9.0012.00
Test sheet	Cam sequence :	12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7
Combination no. : 0 401 840 102	• , •	0-45-60-105-120-165- 180-225-240-285-300- 345
Injection pump   Pump designation : PE12P110A320LS854	Tolerance + - ° :	0.50 (0.75)
EP type number : 0 411 810 044	SD mark cyl. no. :	12
Governor design. : RQ1050PA310   Governor no. : 0 421 801 108	BASIC SETTING	
1	1st speed 1/mi:	1000
Customer-spec. information   Customer : DAIMLER-BENZ	Contrrod trav.mm:	13.7013.80
Engine : 0M404A	Del.quantity cm3/:	15.515.7
1st version kW : 407.0     Speed 1/min: 2100	100H.:	(15.215.9)
1	Dispersion cm3/:	0.4
TEST BENCH REQUIREMENTS	100H.:	(0.7)
Calibrating-oil inlet temp. C : 3842  Overflow valve : 1 417 413 025	Dispersion cm3/:	7.37.5 1.42.0 (1.12.2) 0.4
Inlet press., bar: \$.50	100H.:	
Overflow quantity min. 1/h: 150170	(B) Setting of injer externally-moun	ction pump with ted governor
Calibrating nozzle-holder assembly : 0 681 343 009	SLEEVE TRAVELS 1st speed 1/min: Sleeve travel mm:	1.902.10
Opening   pressure, bar : 172175	2nd speed 1/min: Sleeve travel mm: 3rd speed 1/min: Sleeve travel mm:	4.504.70 1110
Test inj. tubing : 1 680 750 015	FULL-LOAD DELIV. AT	
Outside diameter  x Wall thickness  x Length mm : 6.00x1.50x600	1st version Speed 1/min:	1000
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values	Dispersion cm3/: 1000H.:	(152.5159.5) 4.00
START OF DELIVERY	HIGHEST RATED SPEED	
	Testing: 1st c-rod trav.mm :	12.70
JOS		

Speed 1/min: 1055...1060
2nd c-rod trav.mm: 5.90
Speed 1/min: 1095...1105
4th speed 1/min: 1200
C-rod trav.mm: 0.00...1.00

**APPLICATION** 

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 3.20...3.30 : (3.15...3.35) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column : 12- 1- 5- 9- 8-12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 Cam sequence Test sheet : MB 19,1 N 4 Edition : 12.09.86 Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-Combination no. : 9 401 840 103 SD ang. spacing CS: 345 Tolerance + - : 0.50 Injection pump : 0.50 (0.75) Pump designation : PE12P110A320L8854-1 EP type number : 0 411 810 045 SD mark cyl. no. : 12 Governor Governor design. : RQ750PA374R BASIC SETTING Governer no. : 0 421 801 074 1/mi: 700 1st speed Customer-spec. information Contr.-rod trav.mm: 14.00...14.10 Customer : DAIMLER-BENZ Engine : 0M404A Del.quantity cm3/: 15.6...15.8 1st version kW : 312.0 100H.: (15.3...16.1) 1/min: 1500 Speed Dispersion cm3/:0.4TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. °C : 38...42 Del.quantity cm3/: 1.3...1.8 100H.: (1.0...2.0) Overflow valve : 1 417 413 025 cm3/: 0.4 100H.: (0.7) Dispersion Inlet press., bar: 1.50 Overflow (B) Setting of injection pump with externally-mounted governor quantity min. 1/h: 150...170 Calibrating nozzle-holder SLEEVE TRAVELS assembly : 0 681 343 009 1st speed 1/min: 720 Sleeve travel mm: 1.90...2.10 Opening 2nd speed 1/min: 760 pressure, bar : 172...175 Sleeve travel mm: 4.20...4.40 3rd speed 1/min: 800 Sleeve travel mm: 7.90...8.10 Test inj. tubing : 1 680 750 015 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version : 6.00x1.50x600 x Length mm Speed 1/min: 700 Del.quantity cm3/: 156.0...158.0 1000H.: (153.0...161.0) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. cm3/ : 4.00 Dispersion 1000Ha: (8,00) per values HIGHEST RATED SPEED START OF DELIVERY 1st version Test pressure, bar: 25...27 Control-lever position degrees: 24...32

Testing:
1st c-rod trav.mm : 13.00
Speed 1/min : 750...755
2nd c-rod trav.mm : 5.40
Speed 1/min : 785...795
4th speed 1/min : 850
C-rod trav.mm : 0.00...1.0

Remarks: APPLICATION

Generator set

```
: 3.20...3.30
: (3.15...3.35)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Prestroke mm
Note inst. in remarks column
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                    Cam sequence : 12- 1- 5- 9- 8-
                                                                         - 4- 11- 10- 2- 6- 7
Test sheet
                  : MB 19,1 N 3
Edition
                   : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                    SD ang. spacing CS: 0-45-60-105-120-165-
Combination no.
                  : 0 401 840 104
                                                                         180-225-240-285-300-
                                                                       345
: 0.50 (0.75)
                                                    Tolerance + - 0
Injection pump
Pump designation : PE12P110A320LS854-1
EP type number : 0 411 810 045
                                                    SD mark cyl. no. : 12
Governor
Governor design. : RQ900PA310R
                                                    BASIC SETTING
Governer no.
                 : 0 421 801 059
                                                    1st speed
                                                                  1/mi: 850
Customer-spec. information
Customer
                  : DAIMLER-BENZ
                                                    Contr.-rod trav.mm: 14.10...14.20
Engine
                   : 0M404A
                                                    Del.quantity cm3/: 15.9...16.1
1st version kW : 368.0
                                                                 100H.: (15.6...16.3)
             1/min: 1800
Speed
                                                    Dispersion
                                                                 cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                 190H.: (0.7)
Calibrating-oil inlet temp. C : 38...42
                                                   2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.6...7.8
Del.quantity cm3/: 1.4...2.0
Overflow valve
                                                                 100H.: (1.1...2.2) cm3/: 0.4
                   : 1 417 413 025
                                                   Dispersion
Inlet press., bar: 1.50
                                                                 100H.: (-)
Overflow
                                                    (B) Setting of injection pump with
                                                        externally-mounted governor
 quantity min. 1/h: 150...170
Calibrating nozzle-holder
                                                   SLEEVE TRAVELS
 assembly : 0 681 343 009
                                                    1st speed 1/min: 840
                                                     Sleeve travel mm: 2.10...2.30
                                                   2nd speed 1/min: 900
Opening
pressure, bar : 172...175
                                                     Sleeve travel mm: 5.20...5.40
                                                   3rd speed 1/min: 960
                                                     Sleeve travel mm: 9.20...9.40
Test inj. tubing : 1 680 750 015
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                                                   1st version
                 : 6.00x1.50x600
                                                                 1/min: 850
x Length mm
                                                   Speed
                                                   Del.quantity cm3/: 159.0...161.0
                                                                1000H.: (156.5...163.5)
cm3/: 4.00
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                   Dispersion
                                                                1000H.: (7.50)
    per values ____
                                                   HIGHEST RATED SPEED
START OF DELIVERY
                                                   Testing:
                                                   1st c-rod trav.mm: 13.10
```

J06

Speed 1/min: 905...910
2nd c-rod trav.mm: 5.90
Speed 1/min: 940...950
4th speed 1/min: 1050
C-rod trav.mm: 0.00...1.00

**APPLICATION** 

Generator set

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Prestroke mm
                                                                              : 3.20...3.30
                                                                               : (3.15...3.35)
                                                         Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 12- 1- 5- 9- 8- 3

- 4- 11- 10- 2- 6- 7
Note inst. in remarks column
Test sheet
                    : MB 19,1 0
Edition
                     : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                          SD ang. spacing CS: 0-45-60-105-120-165-
Combination no.
                    : 0 401 840 105
                                                                                 180-225-240-285-300-
                                                          SD ang. spacing CS: 345
Tolerance + - 0.50 (0.75)
Injection pump
Pump designation : PE12P110A320LS855
EP type number : 0 411 810 046
                                                          SD mark cyl. no. : 12
Governor
Governor design. : RQV350...1150PA476R
                                                         BASIC SETTING
Governer no. : 0 421 813 227
                                                          1st speed
                                                                          1/mi: 1130
Customer-spec. information
                     : DAIMLER-BENZ
                                                         Contr.-rod trav.mm: 12.80...12.90
Customer
                                                         Del.quantity cm3/ : 13.4...13.6
Engine
                     : 0M 404 A
1st version kW : 368.0
                                                                         100H.: (13.1...13.8)
Speed
               1/min: 2300
                                                         Dispersion
                                                                        cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                         100H.: (0.8)
Calibrating-oil inlet temp. OC
                                                         2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.4...7.6

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/: 0.4

100H.: (0.7)
                   : 38...42
Overflow valve
                     : 1 417 413 025
Inlet press., bar: 1.50
Over flow
                                                         SLEEVE POSITION
 quantity min. 1/h: 150...170
                                                         Control-lever position
                                                         Degree: -1
Speed 1/min: 1150
Cont.-rod travelmm: 15.20...17.80
Calibrating nozzle-holder
               : 0 681 343 009
 assembly
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                         1st version
                                                                        1/min: 1130
                                                         Speed
Test inj. tubing : 1 680 750 015
                                                         Charge press. hPa : 700
                                                         Del.quantity cm3/: 134.0...136.0
1000H.: (131.5...138.5)
Dispersion cm3/: 4.00
1000H.: (8.00)
Outside diameter
x Wall thickness
                : 6.00x1.50x600
x Length mm
                                                         HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                         1st version
                                                         Control-lever
    per values ____
                                                          position degrees: 62...70
START OF DELIVERY
                                                         Testing:
Test pressure, bar: 25...27
                                                         1st c-rod trav.mm : 11.80
                                                           Speed 1/min: 1185...1195
J08
```

2nd c-rod trav.mm: 4.00 Speed 1/min: 1295...1325 4th speed 1/min: 1450 : 0.00...1.00 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 14...22 Testing: Speed 1/min : 100 C-rod trav.mm min: 9.00 1/min : 350 nm : 7.30...7.50 nm : 2.00 Speed C-rod trav.mm C-rod trav.mm 1/min : 615...675 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1130 C-rod trav.mm : 12.80...12.90 2nd speed 1/min: 700 C-rod trav.mm: 13.10...13.20 3rd speed 1/min: 970 C-rod trav.mm : 13.00...13.10 4th speed 1/min: 1070 C-rod trav.mm : 12.80...12.90 compensator (LDA, ADA, ALDA) 1st version Setting 1/min: 500 Speed Pressure hPa : 700 Contr.-rod trav.mm: 13.10...13.20 Measurement 1/min : 500 Speed 1st pressure hPa : -: 12.40...12.50 C-rod trav.mm 2nd pressure hPa : 385 C-rod trav.mm : 12.90...13.00 3rd pressure hPa : 310 C-rod trav.mm : 12.50...12.70 SWITCH-OVER POINT 1/min : 270 (290) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 700 Speed 1/min: 700 Del.quantity cm3/: 135.0...139.0 1000H.: (132.0...142.0) cm3/:6.00Dispersion 1000H.: (9.00) Charge press. hPa : -

109

Speed 1/min: 500
Del.quantity cm3/: 121.0...123.0
1000H.: (118.5...125.5)
Dispersion cm3/: 6.00
1000H.: (9.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 19,1 0 1 : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 840 106

Injection pump

Pump designation : PE12P110A320L8855 EP type number : 0 411 810 046

Governor

Governor design. : RQV350...1150PA493R

Governer no. : 0 421 813 237

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 404 A Engine

1st version kW : 386.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 150...170

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30 2nd c-rod trav.mm : 4.00 : (3.15...3.35) Speed 1/min: 1295...1325 th speed 1/min: 1450 Contr.-rod trav.mm: 9.00...12.00 4th speed - 3- 9- 8- 3 - 4- 11- 10- 2- 6- 7 C-rod trav.mm : 0.00...1.00 Cam sequence : 12- 1- 5- 9- 8-LOWEST RATED SPEED I Control-lever position degrees: 14...22 SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-Testing: SD ang. spacing CS: 345 Tolerance + - : 0.50 (0.75) 1/min : 100 Speed SD mark cyl. no. : 12 BASIC SETTING 1/min : 690...750 Speed 1/mi: 1130 1st speed compensator (LDA, ADA, ALDA) Contr.-rod trav.mm: 13.10...13.20 1st version Del.quantity cm3/: 14.0...14.2 Setting 1/min : 500 hPa : 700 Speed 100H.: (13.7...14.5) Pressure Contr.-rod trav.mm: 13.10...13.20 Dispersion cm3/:0.4Measurement 1/min : 500 100H.: (0.8) Speed 2nd speed 1/min: 350.0 Contr.-rod trav. m: 7.5...7.7 Del.quantity cm3/: 1.8...2.4 100H.: (1.5...2.6) Dispersion cm3/: 0.4 100H.: (0.7) 1st pressure hPa : : 12.30...12.40 C-rod trav.mm 2nd pressure hPa : 395 C-rod trav.mm : 12.90...13.00 3rd pressure hPa : 330 : 12.50...12.70 C-rod trav.mm SLEEVE POSITION SWITCH-OVER POINT Control-lever position 1/min : 270 (290) Speed Degree: -1 Speed 1/min: 1180 Cont.-rod travelmm: 15.20...17.80 FUEL-DELIVERY CHARACTERISTICS 1st version FULL-LOAD DELIV. AT FULL-LOAD STOP Charge press. hPa ; -1/min : 500 Speed Del.quantity cm3/: 121.0...123.0 1000H.: (118.0...126.0) 1st version Speed 1/min: 1130 Charge press. hPa: 700 Del.quantity cm3/: 140.0...142.0 1000H.: (137.0...145.0) Dispersion cm3/: 4.00 Dispersion cm3/:1000H.: (9.00)
Charge press. hPa: 700 1/min : 1130 Del.quantity cm3/: 99.0...103.0 1000H.: (96.0...106.0) 1000H.: (8.00) cm3/:-HIGHEST RATED SPEED Dispersion 1000H.: (9.00) 1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 12.10 Remarks: 1/min : 1185...1195 Speed \* = Set at reduced-delivery stop. J11

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 19,1 0 2 : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 840 107

Injection pump

Pump designation : PE12P110A320L8855

EP type number : 0 411 810 046

Governor

Governor design. : RQV350...1150PA510 Governer no. : 0 421 813 251

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 404 A Engine

1st version kW : 405.0 1/min: 2300 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 150...170

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Prestroke mm : 3.20...3.30 2nd c-rod trav.mm: 4.00 : (3.15...3.35) Speed 1/min: 1295...1325 th speed 1/min: 1450 Contr.-rod trav.mm: 9.09...12.00 Cam sequence : 12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 16...24 SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-180-225-240-285-300-Testing: 345 1/min : 100 Speed C-rod trav.mm min: 8.60
Speed 1/min: 350
C-rod trav.mm : 7.00...7.20
C-rod trav.mm : 2.00 Tolerance + - 0 : 0.50 (0.75) SD mark cyl. no. : 12 BASIC SETTING 1/min: 610...670 Speed 1st speed 1/mi: 1130 compensator (LDA, ADA, ALDA) Contr.-rod trav.mm: 13.40...13.50 1st version Del.quantity cm3/: 15.0...15.2 Setting 1/min : 500 Speed 100H.: (14.7...15.4) hPa : 700 Pressure Contr.-rod trav.mm: 13.40...13.50 Dispersion cm3/:0.4Measurement 1/min : 500 100H.: (0.7) Speed 2nd speed 1/min: 350.0 Contr.-rod trav. m: 7.0...7.2 Del.quantity cm3/: 1.4...2.0 1st pressure hPa : C-rod trav.mm : 12.30...12.40 2nd pressure hPa : 350 100H.: (1.1...2.2) cm3/: 0.4 C-rod trav.mm : 13.10...13.20 3rd pressure hPa : 250 Dispersion 100H.: (-) C-rod trav.mm : 12.60...12.80 SLEEVE POSITION SWITCH-OVER POINT Control-lever position Speed 1/min: 270 (290) Degree: -1 Speed 17min: 1150 FUEL-DELIVERY CHARACTERISTICS Cont.-rod travelmm: 15.20...17.80 1st version FULL-LOAD DELIV. AT FULL-LOAD STOP Charge press. hPa : -1/min : 450 Speed Del.quantity cm3/: 114.0...118.0 1000H.: (111.0...121.0) Dispersion cm3/: 6.00 1000H.: (9.00) 1st version Speed 1/min: 1130 Charge press. hPa: 700 Del.quantity cm3/: 150.0...152.0 1000H.: (147.5...154.5) Dispersion cm3/ : 4.00 1000H.: (7.50) HIGHEST RATED SPEED **APPLICATION** 1st version Control-lever position degrees: 60...70 Testing: Ship 1st c-rod trav.mm : 12.40 Speed 1/min: 1185...1195

J14

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : KHD 19,0 E : 12.09.86 : 1.83 Calibrating oil : ISO-4113 Combination no. : 0 401 840 700 Injection pump Pump designation : PE12P110A920LS3060 EP type number : 0 411 810 700 Governor Governor design.: RQV300...1250PA479KR Governer no. : 0 421 815 159 Customer-spec. information Customer : KHD Engine : BF12L413FC TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly ` Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90 : (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 4- 9- 8- 5- 2

11- 10- 3- 6- 7- 12

position degrees: 9...17 SD ang. spacing<sup>0</sup>CS: 0-15-60-75-120-135-1 80-195-240-255-300-3 Testing: Speed 1/min : 100 C-rod trav.mm min : 8.10 15 Tolerance + - 0 : 0.50 (0.75) 1/min : 300 Speed : 6.60...6.80 SD mark cyl. no. : 1 C-rod trav.mm BASIC SETTING CONSTANT REGULATION 1/min: 350...500 Speed 1/mi: 1250 1st speed TORQUE CONTROL Torque-control curve - 1st version Contr.-rod trav.mm: 11.70...11.80 1st speed 1/min : 1250 Del.quantity cm3/: 14.4...14.7 C-rod trav.mm : 11.70...11.80 2nd speed 1/min: 850 100H.: (14.2...15.0) C-rod trav.mm : 11.00...11.10 3rd speed 1/min: 500 Dispersion cm3/:0.4C-rod trav.mm : 10.10...10.30 100H.: (0.7) compensator (LDA,ADA,ALDA) -----------1/min: 300.0 2nd speed Contr.-rod trav. m: 6.6...6.8 1st version Del.quantity cm3/: 1.4...1.9 100H.: (1.1...2.1) Dispersion cm3/: 0.7 100H.: (1.0) Setting Speed 1/min : 500 hPa : 750 Pressure Contr.-rod trav.mm: 10.40...10.50 SLEEVE POSITION Measurement Control-lever position 1/min : 500 Speed Degree: -1 1/min: 1270 Speed 1st pressure hPa : -Cont.-rod travelmm: 15.20...17.80 : 9.10...9.30 C-rod trav.mm 2nd pressure hPa : 350 FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm : 10.10...10.30 3rd pressure hPa : 220 1st version C-rod trav.mm : 9.60...9.80 Speed 1/min: 1250 Charge press. hPa: 750 Del.quantity cm3/: 144.5...147.5 SWITCH-OVER POINT Speed 1/min : 280 (295) 1000H.: (142.0...150.0) cm3/: 4.00 Dispersion FUEL-DELIVERY CHARACTERISTICS 1000H.: (7.50) 1st version Charge press. hPa: 750 Speed 1/min: 850 HIGHEST RATED SPEED Speed 1/min: 850 Del.quantity cm3/: 120.0...124.0 1000Ha: (117.0...127.0) 1st version Control-lever position degrees: 56...64 Charge press. hPa : 1/min : 500 Testing: Speed Del.quantity cm3/: 80.5...83.5 1st c=rod trav.mm : 10.70 Speed 1/min: 1290...1300 1000H.: (78.0...86.0) 2nd c-rod trav.mm : 4.00 1/min : 1395...1425 1/min : 1550 Speed 4th speed : 0.00...1.00 C-rod trav.mm Remarks: LOWEST RATED SPEED I APPLICATION

Control-lever

J17

Special-purpose vehicle J18

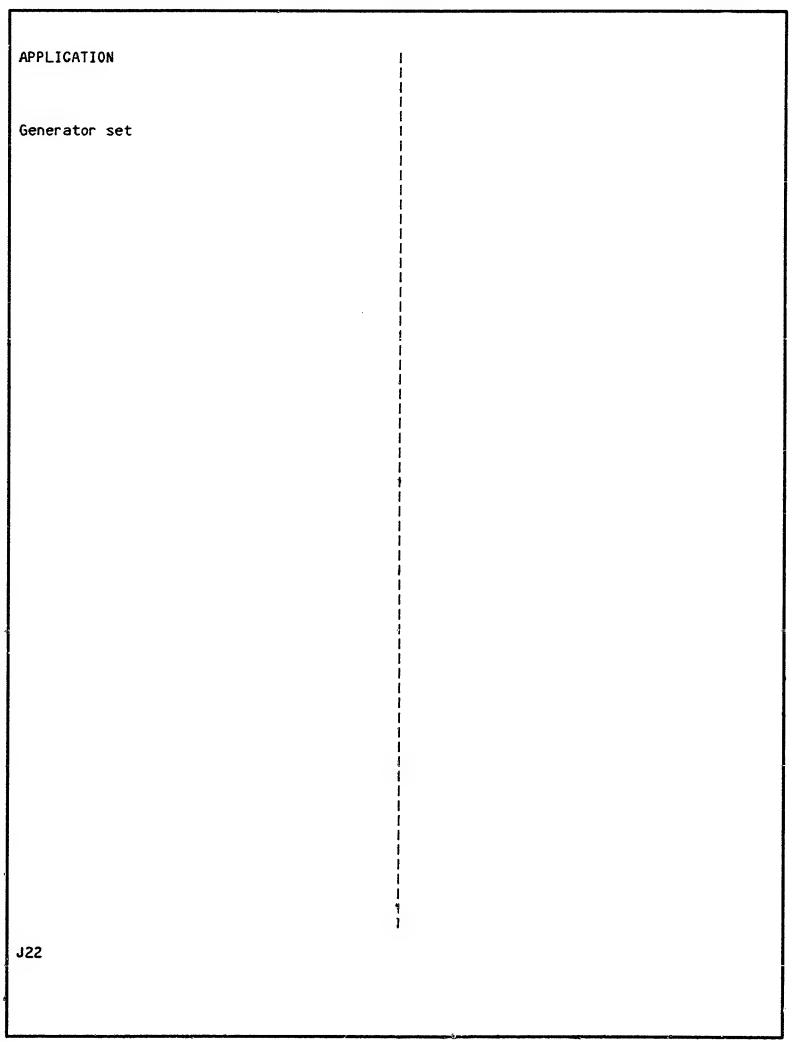
BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 : 12- 1- 5- 9- 8-12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 Test sheet Cam sequence : NB 21,9 B 5 : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-Combination no. : 0 401 840 710 SD ang. spacing CS: 345 Tolerance + - : 0.50 Injection pump : 0.50 (0.75) Pump designation : PE12P120A320L\$3819-1 EP type number : 0 411 820 702 SD mark cyl. no. : 12 Governor Governor design. : RQV350...1150PA493-2 BASIC SETTING Governer no. : 0 421 813 367 1/mi: 1150 1st speed Customer-spec. information : DAIMLER-BENZ Customer Contr.-rod trav.mm: 11.10...11.20 : OM 424 A Engine Del.quantity cm3/: 15.9...16.1 1st version kW : 390.0 100H.: (15.6...16.4) Speed 1/min: 2300 cm3/:0.5Dispersion TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. OC : 38 . . . 42 2nd speed 1/min: 350.0 Contr.-rod trav. m: 5.1...5.3 Inlet press., bar: 1.50 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) cm3/: 0.8 100H.: (1.2) Overflow Dispersion quantity min. 1/h: 150...170 Calibrating nozzle-holder (B) Setting of injection pump with : 1 688 901 019 assembly externally-mounted governor Opening SLEEVE TRAVELS pressure, bar : 207...210 1st speed 1/min: 350 Sleeve travel mm: 1.90...2.30
2nd speed 1/min: 500
Sleeve travel mm: 3.20...3.60
3rd speed 1/min: 1200
Sleeve travel mm: 8.30...8.70 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 4th speed 1/min: 1275 Sleeve travel mm: 9.30...9.70 Outside diameter x Wall thickness SLEEVE POSITION Speed 1/min: 1200 Cont.-rod travelmm: 15.20...17.80 : 6.00X1.50X1000 x Length mm (A) Injection pump setting values Insp. values in parentheses FULL-LOAD DELIV. AT FULL-LOAD STOP Set constant delivery quant. per values 1st version Speed 1/min: 1150 START OF DELIVERY Charge press. hPa: 600 Del.quantity cm3/: 159.0...161.0 1000H.: (156.0...164.0) Test pressure, bar: 25...27

Dispersion cm3/ : 5.00 1000H.: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 65...73 Testing: 1st c-rod trav.mm: 10.10 1/min: 1190...1200 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1280...1310 th speed 1/min: 1375 C-rod trav.mm: 0.00...1.00 4th speed LOWEST RATED SPEED I Testing: 1/min : 100 Speed C-rod trav.mm min: 8.50 1/min : 350 Speed : 6.90...7.10 C-rod trav.mm CONSTANT REGULATION 1/min : 400...600 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa :-Pressure Contr.-rod trav.mm: 9.80...10.00 Measurement 1/min : 500 Speed 1st pressure hPa : 320 C-rod trav.mm : 9.90...10.10 2nd pressure hPa : 380 C-rod trav.mm : 10.50...10.80 SWITCH-OVER POINT 1/min : 270 (290) Spéed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 600 1/min : 650 Del.quantity cm3/: 160.0...166.0 1000H.: (157.0...169.0) cm3/:12.0Dispersion 1000H.: (12.0) Charge press. hPa : -Speed 1/min: 1150 Del.quantity cm3/: 118.0...121.0 1000H.: (115.0...124.0)

Dispersion cm3/: 8.00 1000H.: (12.0) Charge press. hPa: -Speed 1/min: 500 Del.quantity cm3/: 127.0...129.0 1000H.: (124.0...132.0) Dispersion cm3/: 8.00 1000H.: (-)

Remarks:
\* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 4.20...4.30 : (4.15...4.35) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 12- 1- 5- 9- 8-12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 Test sheet : MAN 20,9 V : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-Combination no. : 0 401 840 729 180-225-240-285-300-SD ang. spacing CS: 345 Tolerance + - : 0.50 Injection pump : 0.50 (0.75) Pump designation : PE12P12OA520/4L\$3832 EP type number : 0 411 820 715 SD mark cyl. no. : 12 Governor Governor design. : RQ750PA663-7 BASIC SETTING Governer no. : 0 421 801 331 1/mi: 700 1st speed Customer-spec, information Contra-rod travamm: 13.10...13.20 Customer · MAN Engine : D2842LE Del.quantity cm3/: 21.5...21.7 : 380.0 1st version kW 100H.: (21.2...22.0) Speed 1/min: 1500 cm3/:0.5Dispersion TEST BENCH REQUIREMENTS 100H.: (0.9) Calibrating-oil inlet temp. C inlet temp. : 38...42 1/min: 300.0 2nd speed Contr.-rod trav. m: 6.0...6.2 Del.quantity cm3/: 1.7...2.3 Overflow valve : 1 417 413 025 100H.: (1.4...2.6) cm3/: 0.8 100H.: (1.2) Dispersion Inlet press., bar: 1.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder assembly : 1 688 901 019 1st version Opening 1/min: 700 Speed Del.quantity cm3/: 215.0...217.0 1000H.: (212.0...220.0) Dispersion cm3/: 5.00 1000H.: (9.00) : 207...210 pressure, bar Perforated-plate diameter mm : 0,8 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 067 Testing: 1st c-rod trav.mm : 12.10 Speed 1/min : 750...755 Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000 2nd c-rod trav.mm : 4.00 1/min : 797...810 1/min : 950.0 Speed (A) Injection pump setting values 4th speed Insp. values in parentheses C-rod trav.mm : 0.00...1.00 Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 Remarks: : MAN-NR. 2-7673



Note inst. in remarks column

Test sheet : KHD 19,2 B Edition : 12.09.86

Super ceeded

: ISO-4113 Calibrating oil

: 0 401 840 733 Combination no.

Injection pump

Pump designation : PE12P110A920LS3173 EP type number : 0 411 810 708

Governor

Governor design. : RQ300/1200PA803 Governer no. : 0 421 801 350

Customer-spec. information

Customer : KHD

: BF12L513C Engine

1st version kW : 386.0 1/min: 2400 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder : 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses

Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

: 2.80...2.90 : (2.75...2.95) Prestroke mm

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 4- 9- 8- 5-

SD ang. spacing CS: 0-15-60-75-120-135-1 80-195-240-255-300-3

15

Tolerance + - D : 0.50 (0.75)

SD mark cyl. no. : 1

BASIC SETTING

1/mi: 1200 1st speed

Contr.-rod trav.mm: 12.70...12.80

Del.quantity cm3/: 16.7...16.9

100H.: (16.4...17.2)

Dispersion cm3/:0.5

100H.: (0.8)

2nd speed 1/min: 300.0 Contr.-rod trav. m: 6.5...6.7

Del.quantity cm3/: 1.5...2.1 Dispersion cm3/: 0.7 100H.: (1.0)

SLEEVE POSITION

Control-lever position Degree: 45...47 17min: 600

Cont.-rod travelmm: 19.20...20.80

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

1/min: 1200 Speed Del.quantity cm3/: 167.0...169.0 1000H.: (164.0...172.0)

cm3/ : 5.00 Dispersion 1000H.: (8.03)

HIGHEST RATED SPEED

1st version Control-lever

position degrees: 29...37

Setting point:

Speed 1/min : 600 Contr.-rod trav.mm: 20.0

Testing:

1st c-rod trav.mm : 11.70

Speed 1/min: 1245...1260 2nd c-rod trav.mm : 4.00

1/min : 1290...1320 Speed

4th speed 1/min : 1400 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 9...17
Setting point w/out aux. spring
Speed 1/min: 300
Contr.-rod trav.mm: 6.6

Testing:

Speed 1/min: 100 G-rod trav.mm min: 8.00 Speed 1/min: 300 G-rod trav.mm : 6.50...6.70 C-rod trav.mm : 2.00 Speed 1/min: 395...435

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
                                                                          : 4.20...4.30
                                                                          : (4.15.,.4.35)
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 12- 1- 5- 9- 8-
                                                                            - 4- 11- 10- 2- 6- 7
Test sheet
                    : MAN 20,9 W
                    : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                      SD ang. spacing CS: 0-45-60-105-120-165-
Combination no.
                   : 0 401 840 735
                                                                            180-225-240-285-300-
                                                      SD ang. spacing CS: 345
Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE12P12OA520/4L$3828
EP type number : 0 411 820 714
                                                      SD mark cyl. no. : 12
Governor
Governor design. : RQ1200PA664-2
                                                      BASIC SETTING
Governer no. : 0 421 801 355
                                                                     1/mi: 1150
                                                      1st speed
Customer-spec. information
Customer
                   : MAN
                                                      Contr.-rod trav.mm: 11.90...12.00
Engine
                    : D2842LE
                                                      Del.quantity cm3/: 20.0...20.2
1st version kW : 560.0
                                                                    100H.: (19.7...20.5)
Speed
              1/min: 2400
                                                      Dispersion
                                                                    cm3/:0.5
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.9)
Calibrating-oil inlet temp. OC
                                                     2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.9...7.1
Del.quantity cm3/: 1.7...2.3
                    : 38...42
Overflow valve
                                                                    100H.: (1.4...2.6) cm3/: 0.8
                    : 1 417 413 025
                                                      Dispersion
Inlet press., bar: 1.50
                                                                    100H.: (1.2)
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                 : 1 688 901 019
 assembly
                                                      1st version
                                                     Speed 1/min: 1150
Del.quantity cm3/: 200.0...202.0
1000H.: (197.0...205.0)
Dispersion cm3/: 5.00
Opening
 pressure, bar
                  : 207...210
Perforated-plate
                                                                   1000H.: (9.00)
 diameter mm
                    : 0,8
                                                     HIGHEST RATED SPEED
Test inj. tubing : 1 680 750 075
                                                      Testing:
Outside diameter
                                                      1st c-rod trav.mm : 10.90
x Wall thickness
                                                        Speed 1/min: 1225...1240
                                                      2nd c-rod trav.mm: 4.00
                    : 8.00x2.50x1000
x Length mm
                                                                  1/min : 1285...1315
                                                        Speed
                                                                  1/min ; 1400
(A) Injection pump setting values
                                                      4th speed
    Insp. values in parentheses
Set constant delivery quant.
                                                       C-rod trav.mm : 0.00...1.00
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
                                                     Remarks:
                                                                         : MAN-NR. 2-7686
```

APPLICATION Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 : (3.95...4.15) Prestroke mm : MB 21.9 H : 12.09.86 Test sheet Edition Contr.-rod trav.mm: 9.00...12.00 12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 Superceeded Cam sequence : 12- 1- 5- 9- 8-Calibrating oil : ISO-4113 Combination no. : 0 401 840 736 Injection pump SD ang. spacing CS: 0-45-60-105-120-165-Pump designation : PE12P12OA32OLS3836 180-225-240-285-300-EP type number : 0 411 820 717 345 Tolerance + - 0 : 0.50 (0.75) Governor Governor design. : RQ900PA634-2 Governer no. : 0 421 801 246 SD mark cyl. no. : 12 Customer-spec. information BASIC SETTING Customer : DAIMLÉR-BENZ 1st speed 1/mi: 850 Engine : OM 424 A Contr.-rod trav.mm: 11.80...11.90 1st version kW : 360.0 1/min: 1800 Speed Del.quantity cm3/: 18.3...18.5 TEST BENCH REQUIREMENTS 100H.: (18.0...18.8) Calibrating-oil inlet temp. °C Dispersion cm3/:0.5: 38...42 100H.: (0.8) Overflow valve 2nd speed 1/min: 300.0 Contr.-rod trav. m: 5.2...5.4 Del.quantity cm3/: 1.2...2.0 : 1 417 413 025 Inlet press., bar : 1.50 100H.: (0.9...2.3) cm3/:0.8Overflow Dispersion 100H.: (0.7) quantity min. 1/h: 150...170 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder assembly : 1 688 901 019 1st version 1/min: 850 Opening Speed Del.quantity cm3/: 183.0...185.0 1000H.: (180.0...188.0) Dispersion cm3/: 5.00 1000H.: (8.00) : 207...210 pressure, bar Perforated-plate diameter mm : 0,8 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 067 1st version Control-lever Outside diameter position degrees: 32...40 x Wall thickness : 6.00x1.50x1000 x Length mm Testing: 1st c-rod trav.mm : 10.80 Speed 1/min : 900...905 2nd c-rod trav.mm : 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 932...942 Speed per values 1/min : 1050 4th speed

C-rod trav.mm : 0.00...1.00

**APPLICATION** 

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 Prestroke mm Test sheet : (3.95...4.15) : MB 21,9 I : 12.09.86 Contr.-rod trav.mm: 9.00...12.00 Edition Superceeded Cam sequence : 12- 1- 5- 9- 8-Calibrating oil : ISO-4113 - 4- 11- 10- 2- 6- 7 Combination no. : 0 401 840 737 SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-Injection pump Pump designation : PE12P12OA32OLS3836 180-225-240-285-300-EP type number : 0 411 820 717 345 Governor Tolerance + - 0 : 0.50 (0.75) Governor design. : RQ750PA635 Governer no. : 0 421 801 166 SD mark cyl. no. : 12 BASIC SETTING Customer-spec. information Customer : DAIMLER-BENZ 1st speed 1/mi: 700 Engine : OM 424 A Contr.-rod trav.mm: 11.90...12.00 1st version kW : 316.0 Speed 1/min: 1500 Del.quantity cm3/: 19.3...19.5 TEST BENCH REQUIREMENTS 100H.: (19.0...19.8) Calibrating-oil inlet temp. °C Dispersion cm3/:0.5: 38...42 100H.: (0.8) Overflow valve : 1 417 413 025 2nd speed 1/min: 300.0 Contr.-rod trav. m: 4.8...5.0 Inlet press., bar: 1.50 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) cm3/: 0.8 100H.: (1.2) Overflow Dispersion quantity min. 1/h: 150...170 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-kolder : 1 688 901 019 assembly 1st version 1/min: 700 Opening Speed Del.quantity cm3/: 193.0...195.0 1000H.: (190.0...198.0) Dispersion cm3/: 5.00 1000H.: (8.00) pressure, bar : 207...210 Perforated-plate diameter mm : 0,8 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 067 1st version Control-lever Outside diameter position degrees: 28...36 x Wall thickness : 6.00x1.50x1000 Testing: x Length mm 1st c-rod trav.mm : 10.90 Speed 1/min : 750...755 (A) Injection pump setting values 2nd c-rod trav.mm : 4.00 Insp. values in parentheses 1/min: 780...790 Set constant delivery quant. Speed per values 4th speed 1/min : 900

C-rod trav.mm : 0.00...1.00 **APPLICATION** Generator K02

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column Test sheet : 4.00...4.10 : (3.95...4.15) Prestroke mm : MB 21,9 I 1 : 12.09.86 Contr.-rod trav.mm: 9.00...12.00 Superceeded : 12- 1- 5- 9- 8-Cam sequence - 4- 11- 10- 2- 6- 7 Calibrating oil : ISO-4113 Combination no. : 0 401 840 738 SD ang. spacing CS: 0-45-60-105-120-165-Injection pump Pump designation : PE12P120A320L\$3836 EP type number : 0 411 820 717 180-225-240-285-300-345 : 0.50 (0.75) Tolerance + - 0 Governor Governor design. : RQ750PA635-2 Governer no. : 0 421 801 270 SD mark cyl. no. : 12 Customer-spec. information BASIC SETTING : DAIMLER-BENZ Customer 1st speed 1/mi: 700 : OM 424 LA Engine Contr.-rod trav.mm: 12.40...12.50 : 354.0 1st version kW 1/min: 1500 Speed Del.quantity cm3/: 20.2...20.4 TEST BENCH REQUIREMENTS 100H.: (19.9...20.7) Calibrating-oil inlet temp. DC cm3/:0.5Dispersion : 38...42 100H.: (0.8) Overflow valve : 1 417 413 025 1/min: 300.0 2nd speed Contr.-rod trav. m: 4.9...5.1 Inlet press., bar: 1.50 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) cm3/: 0.8 100H.: (1.2) Overflow Dispersion quantity min. 1/h: 150...170 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 688 901 019 assembly 1st version 1/min: 700 Opening Speed Del.quantity cm3/: 202.0...204.0 1000H.: (199.0...207.0) Dispersion cm3/: 5.00 1000H.: (8.00) : 207...210 pressure, bar Perforated-plate diameter mm : 0,8 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 067 1st version Control-lever Outside diameter position degrees: 27...35 x Wall thickness x Length mm : 6.00x1.50x1000 Testing: 1st c-rod trav.mm : 11.40 1/min : 750...755 (A) Injection pump setting values Speed 2nd c-rod trav.mm : 4.00 Speed 1/min : 778...791 Insp. values in parentheses Set constant delivery quant. per values 4th speed 1/min : 840

C-rod trav.mm : 0.00...1.50 APPLICATION Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     START OF DELIVERY
                                                     Test pressure, bar: 25...27
Note inst. in remarks column
                                                                         : 4.00...4.10
                                                     Prestroke mm
Test sheet
                   : MB 21,9 H 1
                                                                         : (3.95...4.15)
                                                     Contr.-rod trav.mm: 9.00...13.00
Cam sequence : 12- 1- 5- 9- 8-
Edition
                    : 12.09.86
Superceeded
                                                     Cam sequence
                                                                           12- 1- 5- 9- 8- 3
- 4- 11- 10- 2- 6- 7
Calibrating oil : ISO-4113
Combination no.
                  : 0 401 840 739
                                                     SD ang. spacing CS: 0-45-60-105-120-165-
Injection pump
Pump designation : PE12P12OA320LS3836
                                                                           180-225-240-285-300-
EP type number
                    : 0 411 820 717
                                                                           345
                                                                         : 0.50 (0.75)
                                                     Tolerance + - D
Governor
Governor design. : RQ1050PA634-1
Governer no.
                  : 0 421 801 242
                                                     SD mark cyl. no. : 12
Customer-spec. information
                                                     BASIC SETTING
                   : DAIMLER-BENZ
Customer
                                                                    1/mi: 1000
                                                     1st speed
Engine
                   : OM 424 A
                                                     Contr.-rod trav.mm: 11.90...12.00
1st version kW : 385.0
Speed
              1/min: 2100
                                                     Del.quantity cm3/: 18.1...18.3
TEST BENCH REQUIREMENTS
                                                                    100H.: (17.8...18.6)
Calibrating-oil inlet temp. °C
                                                                    cm3/:0.5
                                                     Dispersion
                  : 38...42
                                                                    100H.: (0.9)
Overflow valve
                                                     2nd speed 1/min: 300.0
Contr.-rod trav. m: 5.5...5.7
                    : 1 417 413 025
                                                     Del.quantity cm3/: 1.4...2.0
Inlet press., bar: 1.50
                                                                    100H.: (1.1...2.3)
                                                                   cm3/: 0.8
100H.: (1.2)
Overflow
                                                     Dispersion
 quantity min. 1/h: 150...170
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
              : 1 688 901 019
 assembly
                                                     1st version
                                                                   1/min: 1000
Opening
                                                     Speed
                                                     Del.quantity cm3/: 181.0...183.0
1000H.: (178.0...186.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                   : 207...210
 pressure, bar
Perforated-plate
 diameter mm
                   : 0,8
                                                     HIGHEST RATED SPEED
Test inj. tubing : 1 680 750 067
                                                     1st version
                                                     Control-lever
Outside diameter
                                                      position degrees: -
x Wall thickness
x Length mm
                   : 6.00x1.50x1000
                                                     Testing:
                                                     1st c-rod trav.mm : 10.90
                                                       Speed 1/min: 1050...1055
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     2nd c-rod trav.mm : 4.00
                                                                  1/min : 1090...1110
    per values
```

Remarks: APPLICATION Generator K06

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                            : 4.00...4.10
                                                       Prestroke mm
                                                                            : (3.95...4.15)
                                                       Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                       Cam sequence : 12- 1- 5- 9- 8- 3
- 4- 11- 10- 2- 6- 7
Test sheet
                    : MB 21,9 I 2
Edition
                    : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                       SD ang. spacing CS: 0-45-60-105-120-165-
Combination no. : 0 401 840 740
                                                                              180-225-240-285-300-
                                                       SD ang. spacing CS: 345
Tolerance + - : 0.50
Injection pump
                                                                         : 0.50 (0.75)
Pump designation : PE12P12OA32OLS3836-1
EP type number : 0 411 820 718
                                                       SD mark cyl. no. : 12
Governor
Governor design. : RQV350...1150PA493-2
Governer no. : 0 421 813 367
                                                       BASIC SETTING
                                                                       1/mi: 1150
                                                       1st speed
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                       Contr.-rod trav.mm: 11.10...11.20
                    : OM 424 A
                                                       Del.quantity cm3/: 15.9...16.1
Engine
1st version kW : 390.0
                                                                      100H.: (15.6...16.4)
              1/min: 2300
Speed
                                                                      cm3/:0.5
                                                       Dispersion
TEST BENCH REQUIREMENTS
                                                                      100H.: (0.8)
Calibrating-oil inlet temp. °C : 38...42
                                                       2nd speed 1/min: 350.0
Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/: 1.4...2.0
Inlet press., bar: 1.50
                                                                      100H.: (1.1...2.3)
cm3/: 0.8
100H.: (1.2)
Over flow
                                                       Dispersion
 quantity min. 1/h: 150...170
Calibrating nozzle-holder
                                                        (B) Setting of injection pump with
                  : 1 688 901 019
                                                            externally-mounted governor
 assembly
Opening
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 350
Sleeve travel mm: 1.90...2.30
 pressure, bar
                   : 207...210
Perforated-plate
                                                       2nd speed
                                                                    1/min: 500
                    : 0.8
                                                         Sleeve travel mm: 3.20...3.60
 diameter mm
                                                       3rd speed 1/min: 12000
                                                         Sleeve travel mm: 8.30...8.70
                                                       4th speed 1/min: 1275
Sleeve travel mm: 9.30...9.70
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                                                       SLEEVE POSITION
                    : 6.00x1.50x1000
                                                                     1/min: 1200
x Length mm
                                                       Speed
                                                       Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                       1st version
                                                       Speed
                                                                     1/min: 1150
START OF DELIVERY
                                                       Charge press. hPa : 600
                                                       Del.quantity cm3/: 159.0...161.0
Test pressure, bar: 25...27
                                                                     1000H.: (156.0...164.0)
```

Dispersion cm3/ : 5.00 1000H.: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 65...73 Testing: 1st c-rod trav.mm: 10.10 1/min : 1190...1200 Speed 2nd c-rod trav.mm : 4.00 1/min : 1280...1310 1/min : 1375 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 9...17 Testing: Speed 1/min: 100 C-rod trav.mm min: 8.50 Speed 1/min: 350 : 6.90...7.10 C-rod trav.mm CONSTANT REGULATION Speed 1/min : 400...600 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 600 Pressure Contr.-rod trav.mm: 11.10...11.20 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.00...10.20 2nd pressure hPa : 380 C-rod trav.mm : 10.80...10.90
3rd pressure hPa : 320
C-rod trav.mm : 10.10...10.30 SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 600 1/min : 650 Speed Del.quantity cm3/: 160.0...166.0 1000H.: (157.0...169.0) Charge press. hPa : -1/min : 500 Speed

**K08** 

Del.quantity cm3/: 127.0...129.0 1000H.: (124.0...132.0)

Charge press. hPa : -

Speed 1/min: 1150 Del.quantity cm3/: 118.0...121.0

1000H.: (115.0...124.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 21,9 I 3 : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 840 741

Injection pump

Pump designation : PE12P12OA32OLS3836-1

EP type number : 0 411 820 718

Governor

Governor design. : RQ750PA635-1 Governer no. : 0 421 801 23 : 0 421 801 235

Customer-spec. information

: DAIMLER-BENZ Customer

Engine : OM 424 LA

1st version kW : 327.0 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 150...170

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm

Contr.-rod trav.mm: 9.00...12.00

: 4.00...4.10 : (3.95...4.15)

Cam sequence

: 12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7

SD ang. spacing OCS: 0-45-60-105-120-165-

180-225-240-285-300-

345

Tolerance + - 0 : 0.50 (0.75)

SD mark cyl. no. : 12

BASIC SETTING

1st speed

1/mi: 700

Contr.-rod trav.mm: 11.80...11.90

Del.quantity cm3/: 19.0...19.2

100H.: (18.7...19.5)

Dispersion

cm3/:0.5

100H.: (0.8)

2nd speed

1/min: 300.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/: 1.4...2.0

Dispersion

100H.: (1.1...2.3) cm3/: 0.8 100H.: (1.2)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed

1/min: 700

Del.quantity cm3/: 190.0...192.0 1000H:: (187.0...195.0) Dispersion cm3/: 5.00 1000H:: (8.00)

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 28...36

Testing:

1st c-rod trav.mm : 10.90

Speed

1/min: 750...755

2nd c-rod trav.mm : 4.00

Speed

1/min : 780...790

4th speed

1/min: 900

K10

C-rod trav.mm : 0.00...1.00

**APPLICATION** 

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 Prestroke mm Test sheet : MB 21,9 K : (3.95...4.15) : 12.09.86 Edition Contr.-rod trav.mm: 9.00...12.00 Superceeded Cam sequence : 12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 Calibrating oil : ISO-4113 Combination no. : 0 401 840 742 Injection pump SD ang. spacing CS: 0-45-60-105-120-165-Pump designation : PE12P12OA32OLS3836-1 180-225-240-285-300-: 0 411 820 718 EP type number 345 Tolerance + - 0 Governor : 0.50 (0.75) Governor design. : RQV350...1150PA493-3 Governer no. : 0 421 813 422 SD mark cyl. no. : 12 BASIC SETTING Customer-spec. information Customer : DAIMLER-BENZ 1st speed 1/mi: 1150 : OM 424 LA Engine Contr.-rod trav.mm: 12.10...12.20 1st version kW : 452.0 1/min: 2300 Speed Del.quantity cm3/: 18.0...18.2 TEST BENCH REQUIREMENTS 100H.: (17.7...18.5) Calibrating-oil inlet temp. C Dispersion cm3/:0.5: 38...42 100H.: (0.9) Overflow valve : 1 417 413 025 2nd speed 1/min: 350.0 Contr.-rod trav. m: 4.8...5.0 Del.quantity cm3/: 1.4...2.0 100H:: (1.1...2.3) Dispersion cm3/: 0.8 100H:: (1.2) Inlet press., bar: 1.50 Overflow quantity %in. 1/h: 150...170 Calibrating nozzle-holder (B) Setting of injection pump with : 1 688 901 019 assembly externally-mounted governor SLEEVE TRAVELS Opening pressure, bar : 207...210 1st speed 1/min: 350 Sleeve travel mm: 2.20...2.30 2nd speed 1/min: 510 Sleeve travel mm: 3.20...3.50 Perforated-plate diameter mm : 0,8 3rd speed 1/min: 1150 Sleeve travel mm: 7.50...8.80 Test inj. tubing : 1 680 750 067 4th speed 1/min: 1200 Sleeve travel mm: 8.90...9.10 Outside diameter x Wall thickness SLEEVE POSITION x Length mm : 6.00x1.50x1000 Control-lever position Degree: -1 1/min: 1180 (A) Injection pump setting values Speed Insp. values in parentheses Set constant delivery quant. Cont.-rod travelmm: 15.20...17.80 per values \_\_\_\_ FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version Speed 1/min: 1150 Charge press. hPa: 700 Del.quantity cm3/: 180.0...182.0 1000H.: (177.0...185.0) Dispersion cm3/: 5.00 1000H.: (9.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 61...69 Testing: 1st c-rod trav.mm : 11.10 Speed 1/min : 1190...1200 2nd c-rod trav.mm : 4.00 1/min: 1235...1265 Speed 1/min: 1350 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.20 Speed 1/min : 350 C-rod trav.mm : 4.50 ... 4.70 CONSTANT REGULATION Speed 1/min: 400...600 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure hPa Contr.-rod trav.mm: 12.10...12.20 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 10.10...10.30 2nd pressure hPa : 540 C-rod trav.mm : 11.40...11.50 3rd pressure hPa : 470 C-rod trav.mm : 10.60...10.80 SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700

**K12** 

1/min : 650 Speed Del.quantity cm3/: 179.0...185.0 1000H.: (176.0...188.0) cm3/: 8.00 1000H.: (12.0) Dispersion Charge press. hPa: 700 Speed 1/min : 1150 Del.quantity cm3/: 134.0...138.0 1000H.: (131.0...141.0) cm3/: 8.00 Dispersion 1000H.: (12.0) Charge press. hPa : -Speed 1/min: 500
Del.quantity cm3/: 131.0...133.0
1000H.: (128.0...136.0)
Dispersion cm3/: 8.00 1000H.: (12.0)

Remarks:
\* = Set at reduced-delivery stop.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    START OF DELIVERY
                                                    Test pressure, bar: 25...27
Note inst. in remarks column
                                                                       : 4.00...4.10
                                                    Prestroke mm
Test sheet
                   : MB 21.9 I 4
: 12.09.86
                                                                       : (3.95...4.15)
                                                    Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9-
Edition
Superceeded
                                                                         - 4- 11- 10- 2- 6- 7
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 840 743
Injection pump
                                                    SD ang. spacing CS: 0-45-60-105-120-165-
Pump designation : PE12P12OA32OLS3836-1
                                                                         180-225-240-285-300-
EP type number
                   : 0 411 820 718
                                                                         345
                                                                       : 0.50 (0.75)
Governor
                                                    Tolerance + - 0
Governor design.
Governer no.
                   : RQ750PA635
                   : 0 421 801 166
                                                    SD mark cyl. no. : 12
Customer-spec. information
                                                    BASIC SETTING
Customer
                   : DAIMLER-BENZ
                                                                  1/mi: 700
                                                    1st speed
                   : OM 424 A
Engine
                                                    Contr.-rod trav.mm: 11.90...12.00
1st version kW : 316.0
Speed
                                                    Del.quantity cm3/: 19.3...19.5
             1/min: 1500
TEST BENCH REQUIREMENTS
                                                                  100H.: (19.0...19.8)
Calibrating-oil inlet temp. OC
                                                                 cm3/:0.5
                                                    Dispersion
                   : 38...42
                                                                  100H.: (0.8)
Overflow valve
                   : 1 417 413 025
                                                    2nd speed
                                                                  1/min: 300.0
                                                    Contr.-rod trav. m: 4.9...5.1
                                                    Del.quantity cm3/: 1.4...2.0
Inlet press., bar : 1.50
                                                                  100H.: (1.1...2.3)
                                                                 cm3/:0.8
Over flow
                                                    Dispersion
                                                                  100H.: (1.2)
 quantity min. 1/h: 150...170
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
            : 1 688 901 019
 assembly
                                                    1st version
                                                    Speed
                                                                 1/min: 700
Opening
                                                    Del.quantity cm3/: 193.0...195.0
                   : 207...210
pressure, bar
                                                                1000H.: (190.0...198.0)
cm3/: 5.00
1000H.: (8.00)
Perforated-plate
                                                    Dispersion
diameter mm
                   : 0,8
                                                    HIGHEST RATED SPEED
Test inj. tubing
                  : 1 680 750 067
                                                    1st version
                                                    Control-lever
Outside diameter
                                                    position degrees: 25...33
x Wall thickness
x Length mm
                   : 6.00x1.50x1000
                                                    Testing:
                                                    1st c-rod trav.mm : 10.90
Speed 1/min : 750...755
(A) Injection pump setting values
    Insp. values in parentheses
                                                    2nd c-rod trav.mm: 4.00
                                                                1/min: 780...790
    Set constant delivery quant.
                                                     Speed
    per values
```

Remarks: APPLICATION Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 Prestroke mm Test sheet : (3.95...4.15) : MB 21,9 K 1 : 12.09.86 Edition Contr.-rod trav.mm: 9.00...12.00 Superceeded : 12- 1- 5- 9- 8-Cam sequence - 4- 11- 10- 2- 6- 7 Calibrating oil : ISO-4113 Combination no. : 0 401 840 744 Injection pump \$D ang. spacing CS: 0-45-60-105-120-165-Pump designation : PE12P12OA32OL\$3836-2 180-225-240-285-300-EP type number : 0 411 820 719 Tolerance + - 0 : 0.50 (0.75) Governor Governor design. : RQV350...1050PA493 Governer no. : 0 421 813 365 SD mark cyl. no. : 12 Customer-spec. information BASIC SETTING : DAIMLER-BENZ Customer 1st speed 1/mi: 1050 : OM 424 A Engine Contr.-rod trav.mm: 10.20...10.30 1st version kW : 357.0 1/min: 2100 Del.quantity cm3/: 15.1...15.3 Speed TEST BENCH REQUIREMENTS 100H.: (14.8...15.6) Calibrating-oil inlet temp. °C cm3/:0.5Dispersion : 38...42 100H.: (0.8) Overflow valve : 1 417 413 025 1/min: 350.0 2nd speed Contr.-rod trav. m: 4.6...4.8 Del.quantity cm3/: 1.2...1.8 100H: (0.9...2.1) Dispersion cm3/: 0.8 100H:: (1.2) Inlet press., bar: 1.50 Over flow quantity min. 1/h: 150...170 Calibrating nozzle-holder (B) Setting of injection pump with assembly : 1 688 901 019 externally-mounted governor Opening SLEEVE TRAVELS 1st speed 1/min: 350
Sleeve travel mm: 1.90...2.30
2nd speed 1/min: 500 pressure, bar : 207...210 Perforated-plate Sleeve travel mm: 3.20...3.60 diameter mm : 0,8 3rd speed 1/min: 1200 Sleeve travel mm: 8.30...8.70 4th speed 1/min: 1275 Sleeve travel mm: 9.30...9.70 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness SLEEVE POSITION Control-lever position : 6.00x1.50x1000 x Length mm Degree: -1 1/min: 1200 (A) Injection pump setting values Speed Insp. values in parentheses Set constant delivery quant. Cont.-rod travelmm: 15.20...17.80 per values \_\_\_\_ FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version Speed 1/min: 1050 Charge press. hPa: 600 Del.quantity cm3/: 151.0...153.0 1000H.: (148.0...156.0) cm3/ : 5.00Dispersion 1000H.: (8,00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 53...61 Testing: 1st c-rod trav.mm : 9.20 1/min: 1085...1095 Speed 2nd c-rod trav.mm: 4.00 1/min : 1165...1195 1/min : 1350 Speed 4th speed C-rod tray.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: Speed 1/min : 100 C-rod trav.mm min: 6.20 Speed 1/min: 350 C-rod trav.mm : 4.60...4.80 CONSTANT REGULATION 1/min : 360...500 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed : 600 Pressure hPa Contr.-rod trav.mm: 10.20...10.30 Measurement 1/min : 500 Speed 1st pressure hPa : -: 9.50...9.60 C-rod trav.mm 2nd pressure hPa : 280 : 9.90...10.00 C-rod trav.mm 3rd pressure hPa : 240 C-rod trav.mm : 9.60...9.80 SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS

1st version

K16

Charge press. hPa : -

Remarks:
\* = Set at reduced-delivery stop.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Prestroke mm
                                                                            : 4.00...4.10
                                                                           : (3.95...4.15)
                                                       Contr.-rod trav.mm: 9.00...12.00
Note inst, in remarks column
                                                       Cam sequence : 12- 1- 5- 9- 8- 3
- 4- 11- 10- 2- 6- 7
Test sheet
                    : MB 21,9 K 2
Edition
                    : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                       SD ang. spacing CS: 0-45-60-105-120-165-
Combination no. : 0 401 840 745
                                                                              180-225-240-285-300-
                                                       SD ang. spacing CS: 345
Tolerance + + : 0.50
Injection pump
                                                                         : 0.50 (0.75)
Pump designation : PE12P120A320LS3836-3
EP type number : 0 411 820 720
                                                       SD mark cyl. no. : 12
Governor
Governor design. : RQV350...1150PA493-5
Governer no. : 0 421 813 520
                                                       BASIC SETTING
                                                       1st speed
                                                                       1/mi: 1150
Customer-spec. information
                    : DAIMLER-BENZ
Customer
                                                       Contr.-rod trav.mm: 11.10...11.20
                    : OM 424 A
                                                       Del.quantity cm3/: 15.9...16.1
Engine
1st version kW : 390.0
                                                                      100H.: (15.6...16.4)
Speed
              1/min: 2300
                                                       Dispersion
                                                                      cm3/:0.5
TEST BENCH REQUIREMENTS
                                                                      100H.: (0.8)
Calibrating-oil inlet temp. C : 38...42
                                                                     1/min: 350.0
                                                       2nd speed
                                                       Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/: 1.4...2.0
Inlet press., bar: 1.50
                                                                     100H.: (1.1...2.3)
cm3/: 0.8
Over flow
                                                       Dispersion
 quantity min. 1/h: 150...170
                                                                      100H.: (1.2)
Calibrating nozzle-holder
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
                   : 1 688 901 019
assembly
                                                       SLEEVE TRAVELS
Opening
pressure, bar
                   : 207...210
                                                       1st speed 1/min: 350
                                                         Sleeve travel mm: 1.90...2.30
                                                       2nd speed 1/min: 500
Perforated-plate
                                                         Sleeve travel mm: 3.20...3.60
diameter mm
                    : 0,8
                                                       3rd speed 1/min: 1200
Sleeve travel mm: 8.30...8.70
4th speed 1/min: 1275
Sleeve travel mm: 9.30...9.70
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                                                       SLEEVE POSITION
                                                       Control-lever position
                    : 6.00x1.50x1000
x Length mm
                                                                    Degree: MAX.
                                                       Speed 17min: 1200
Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values ____
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
                                                       1st version
Test pressure, bar: 25...27
                                                       Speed
                                                                     1/min: 1150
                                                       Charge press. hPa : 600
```

Del.quantity cm3/: 159.0...161.0 1000H.: (156.0...164.0) cm3/ : 5.00Dispersion 1000H.: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 65...73 Testing: 1st c-rod trav.mm : 10.10 1/min : 1190...1200 Speed 2nd c-rod trav.mm : 4.00 1/min: 1280...1310 Speed 1/min : 1375 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 9...17 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.50 1/min : 350 Speed C-rod trav.mm : 6.90...7.10 CONSTANT REGULATION 1/min: 400...600 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 600 Pressure Contr.-rod trav.mm: 11.10...11.20 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.00...10.20 2nd pressure hPa : 380 C-rod trav.mm : 10.80...10.90 3rd pressure hPa : 320 C-rod trav.mm : 10.10...10.30 SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 600 Speed 1/min: 650 Del.quantity cm3/: 160.0...166.0 1000H.: (157.0...169.0)

K18

Remarks:
: LIEBHERR
\* = Set at reduced-delivery stop.

**APPLICATION** 

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      START OF DELIVERY
                                                      Test pressure, bar: 25...27
Note inst. in remarks column
                                                                          : 4.00...4.10
                                                      Prestroke mm
Test sheet
                    : MB 21,9 K 3
                                                                          : (3.95...4.15)
Edition
                    : 12.09.86
                                                      Contr.-rod trav.mm: 9.00...12.00
Superceeded
                                                                         : 12- 1- 5- 9- 8-
                                                                            - 4- 11- 10- 2- 6- 7
                                                      Cam sequence
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 840 746
                                                      SD ang. spacing CS: 0-45-60-105-120-165-
Injection pump
Pump designation : PE12P12OA32OLS3836-3
                                                                            180-225-240-285-300-
EP type number : 0 411 820 720
                                                      Tolerance + - 0
                                                                          : 0.50 (0.75)
Governor
Governor design. : RQV350...1150PA493-6
Governer no. : 0 421 813 523
                                                      SD mark cyl. no. : 12
Customer-spec. information
                                                      BASIC SETTING
Customer
                   : DAIMLER-BENZ
                                                      1st speed 1/mi: 1150
                    : OM 424 LA
Engine
                                                      Contr.-rod trav.mm: 12.10...12.20
1st version kW : 452.0
Speed
              1/min: 2300
                                                      Del.quantity cm3/: 18.0...18.2
TEST BENCH REQUIREMENTS
                                                                    100H.: (17.7...18.5)
Calibrating-oil inlet temp. OC
                                                                    cm3/:0.5
                                                      Dispersion
                  : 38...42
                                                                    100H.: (0.9)
Overflow valve
                    : 1 417 413 025
                                                                    1/min: 350.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 5.2...5.4
Del.quantity cm3/: 1.6...2.2
Inlet press., bar: 1.50
                                                                    100H.: (1.3...2.5)
                                                                    cm3/:0.8
Overflow
                                                      Dispersion
 quantity min. 1/h: 150...170
                                                                    100H.: (1.2)
                                                      (B) Setting of injection pump with
Calibrating nozzle-holder
              : 1 688 901 019
 assembly
                                                          externally-mounted governor
Opening
                                                      SLEEVE TRAVELS
                  : 207...210
                                                                  1/min: 350
 pressure, bar
                                                      1st speed
                                                        Sleeve travel mm: 2.20...2.30
                                                      2nd speed 1/min: 510
Perforated-plate
                                                     Sleeve travel mm: 3.20...3.50

3rd speed 1/min: 1150

Sleeve travel mm: 7.50...8.80

4th speed 1/min: 1200

Sleeve travel mm: 8.90...9.10
                    : 0,8
 diameter mm
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                                                      SLEEVE POSITION
                  : 6.00x1.50x1000
x Length mm
                                                      Control-lever position
                                                                   Degree: -1
                                                                   17min: 1180
(A) Injection pump setting values
                                                      Speed
    Insp. values in parentheses
Set constant delivery quant.
                                                      Cont.-rod travelmm: 15.20...17.80
    per values
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
```

```
1st version
              1/min: 1150
Speed
Charge press. hPa: 700
Del.quantity cm3/: 180.0...182.0
             1000H.: (177.0...185.0)
cm3/: 5.00
Dispersion
             1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 11.10
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
             1/min: 1235...1265
  Speed
             1/min: 1350
4th speed
  C-rod trav.mm
                   : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 6.20
Speed
             1/min : 350
                   : 4.50...4.70
C-rod trav.mm
CONSTANT REGULATION
Speed
             1/min: 400...600
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
hPa : 700
Speed
Pressure
            hPa
Contr.-rod trav.mm: 12.10...12.20
Measurement
            1/min : 500
Speed
1st pressure hPa
                   : 10.10...10.30
  C-rod trav.mm
2nd pressure hPa
                   : 540
  C-rod trav.mm
                   : 11.40...11.50
3rd pressure hPa : 470
  C-rod trav.mm
                   : 10.60...10.80
SWITCH-OVER POINT
            1/min: 270 (290)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
```

K20

```
1/min : 650
Del.quantity cm3/: 179.0...185.0
                1000H.: (176.0...188.0)
                cm3/: 8.00
1000H.: (12.0
Dispersion
                          (12.0)
Charge press. hPa: 700
Speed
                1/min : 1150
Del.quantity cm3/: 134.0...138.0
                1000H.: (131.0...141.0)
                 cm3/:8.00
Dispersion
                1000H.: (12.0)
Charge press. hPa : -
Speed 1/min : 5
Speed 1/min: 500
Del.quantity cm3/: 131.0...133.0
1000H.: (128.0...136.0)
Dispersion cm3/: 8.00
                1000H.: (12.0)
```

Remarks:
\* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 4.00...4.10 : (3.95...4.15) Note inst. in remarks column Contr.-red trav.mm: 9.00...12.00 Cam sequence : 12- 1- 5- 9- 8- 3
- 4- 11- 10- 2- 6- 7 Test sheet Edition Superceeded : MB 21,9 L : 12.09.86 Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-Combination no. : 0 401 840 747 180-225-240-285-300-SD ang. spacing CS: 345
Tolerance + - : 0.50 (0.75) Injection pump Pump designation : PE12P110A320LS3837 EP type number : 0 411 810 709 SD mark cyi. no. : 12 Governor Governor design. : RQ900PA634 BASIC SETTING Governer no. : 0 421 801 165 1st speed 1/mi: 880 Customer-spec. information Contr.-rod trav.mm: 12.60...12.70 Customer : DAIMLER-BENZ Engine : OM 424 Del.quantity cm3/: 12.1...12.3 1st version kW : 288.0 100H.: (11.8...12.5) Speed 1/min: 1800 Dispersion cm3/:0.4TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. °C : 38...42 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.2...8.4 Del.quantity cm3/: 1.4...2.0 Overflow valve 100H.: (1.1...2.2) cm3/: 0.4 100H.: (0.7) : 1 417 413 025 Dispersion Inlet press., bar : 1.50 Over flow (B) Setting of injection pump with externally-mounted governor quantity min. 1/h: 150...170 Calibrating nozzle-holder SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 5.90...0.00 : 0 681 343 009 assembly Opening. pressure, bar : 172...175 SLEEVE POSITION Control-lever position Degree: -1 Test inj. tubing : 1 680 750 015 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version : 6.00x1.50x600 x Length mm 1/min: 880 Speed Del.quantity cm3/: 121.0...123.0 1000H.: (118.5...125.5) (A) Injection pump setting values cm3/ : 4.00Insp. values in parentheses Dispersion 1000H.: (8.00) Set constant delivery quant. per values \_\_\_\_ HIGHEST RATED SPEED START OF DELIVERY 1st version Test pressure, bar: 25...27 Control-lever position degrees: 34...42

Testing:
1st c-rod trav.mm : 11.60
Speed 1/min : 900...905
2nd c-rod trav.mm : 4.00
Speed 1/min : 941...951
4th speed 1/min : 1050
C-rod trav.mm : 0.00...1.00

Remarks: APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 4.00...4.10 : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column Cam sequence : 12- 1- 5- 9- 8-Test sheet : MB 21\_9 M - 4- 11- 10- 2- 6- 7 Edition : 12.09.86 Superceeded Calibrating oil : ISO-4113 SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-Combination no. : 0 401 840 748 180-225-240-285-300-SD ang. spacing CS: 345 Tolerance + - : 0.50 (0.75) Injection pump Pump designation : PE12P110A320L\$3837 EP type number : 0 411 810 709 SD mark cyl. no. : 12 Governor Governor design. : RQ750PA636 Governer no. : D 421 801 167 BASIC SETTING 1st speed 1/mi: 700 Customer-spec. information Contr.-rod trav.mm: 12.80...12.90 Customer : DAIMLER-BENZ Engine : OM 424 Del.guantity cm3/: 12.6...12.8 1st version kW : 247.0 100H.: (12.3...13.1) 1/min: 1500 Speed Dispersion cm3/:0.4TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. C 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.2...8.4 Del.quantity cm3/: 1.2...1.8 100H.: (0.9...2.0) Dispersion cm3/: 0.4 100H.: (0.7) : 38 . . . 42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow (B) Setting of injection pump with quantity min. 1/h: 150...170 externally-mounted governor SLEEVE TRAVELS Calibrating nozzle-holder assembly : 0 681 343 009 1st speed 1/min: 720
Sleeve travel mm: 2.40...2.60
2nd speed 1/min: 760 Opening pressure, bar : 172...175 Sleeve travel mm: 4.90...5.10 3rd speed 1/min: 800 Sleeve travel mm: 8.00...8.20 Test inj. tubing : 1 680 750 015 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version : 6.00x1.50x600 x Length mm 1/min: 700 Speed Del.quantity cm3/: 126.0...128.0 1000H.: (123.0...131.0) cm3/ : 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Dispersion 1000H.: (8.00) per values HIGHEST RATED SPEED START OF DELIVERY 1st version Test pressure, bar: 25...27 Control-lever position degrees: 23...31

Testing:
1st c-rod trav.mm : 11.80
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 790...800
4th speed 1/min : 900
C-rod trav.mm : 0.00...1.00

Remarks: **APPLICATION** 

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 4.00...4.10
: (3.95...4.15)
                                                     Prestroke mm
Note inst. in remarks column
                                                     Contr.-rod trav.mm: 9.00...12.00
                                                                        : 12- 1- 5- 9- 8-
                                                     Cam sequence
Test sheet
                                                                           - 4- 11- 10- 2- 6- 7
                   : MB 21,9 N
                    : 06.10.86
Edition
Superceéded
Calibrating oil : ISO-4113
                                                     SD ang. spacing CS: 0-45-60-105-120-165-
                                                                           180-225-240-285-300-
Combination no.
                    : 0 401 840 749
                                                     SD ang. spacing CS: 345
Tolerance + - : 0.50
                                                                        : 0.50 (0.75)
Injection pump
Pump designation : PE12P110A32OLS3837-1
EP type number
                  : 0 411 810 710
                                                     SD mark cyl. no. : 12
Governor
Governor des : RQV350...1150PA378-1
                                                     BASIC SETTING
Governer no.
                   : 0 421 813 349
                                                     1st speed
                                                                     1/mi: 1150
Customer-spec. information
                    : DAIMLER-BENZ
                                                     Contr.-rod trav.mm: 11.40...11.50
Customer
Engine
                    : OM 424
                                                     Del.quantity cm3/: 12.2...12.4
1st version kW : 309.0
                                                                    100H.: (11.9...12.7)
Speed
              1/min: 2300
                                                                   cm3/:0.4
                                                     Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.8)
Calibrating-oil inlet temp. C
                                                     2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.7...7.9
Del.quantity cm3/: 1.4...2.0
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                                   100H.: (1.1...2.2)
                                                                   cm3/:0.4
                                                     Dispersion
                                                                   100H.: (0.7)
Inlet press., bar: 1.50
Over flow
                                                     SLEEVE POSITION
                                                     Control-lever position
 quantity min. 1/h: 150...170
                                                                  Degree: -1
Calibrating nozzle-holder
                                                                   17min: 1200
                                                     Speed
                  : 0 681 343 009
                                                     Cont.-rod travelmm: 15.20...17.80
assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                     1st version
                                                                   1/min: 1150
                                                     Speed
                                                     Del.quantity cm3/: 122.0...124.0
1000H.: (119.0...127.0)
Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
Outside diameter
                                                                  1000H.: (8.00)
x Wall thickness
x Length mm
                   : 6.00x1.50x600
                                                     HIGHEST RATED SPEED
(A) Injection pump setting values
                                                     1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                     Control-lever
                                                      position degrees: 60...68
    per values ____
                                                     Testing:
START OF DELIVERY
                                                     1st c-rod trav.mm : 10.40
Test pressure, bar: 25...27
                                                       Speed 1/min: 1170...1180
                                                     2nd c-rod trav.mm: 4.00
```

1/min : 1235...1265 Speed 1/min : 1300 4th speed C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I Control-lever

position degrees: 16...22

Testing:

Speed 1/min : 100 C-rod trav.mm min: 9.00 1/min : 350 mm : 7.40...7.60 Speed C-rod trav.mm

CONSTANT REGULATION

1/min: 375...485 Speed

SWITCH-OVER POINT

1/min : 270 (290) Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 600 Del.quantity cm3/: 96.0...100.0 1000H.: (93.0...103.0)

cm3/: 6.00 1000H.: (9.00) Dispersion

1/min : 1150 Speed

Del.quantity cm3/: 90.0...94.0 1000H:: (87.0...97.0)

cm3/: 6.00 1000H.: (9,00) Dispersion

Remarks:

\* = Set at reduced-delivery stop.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                             : 4.00...4.10
: (3.95...4.15)
                                                        Prestroke mm
Note inst. in remarks column
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam sequence : 12- 1- 5- 9- 8-
Test sheet
                                                                               - 4- 11- 10- 2- 6- 7
                    : MB 21,9 N 1
                     : 12,09,86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                        SD ang. spacing CS: 0-45-60-105-120-165-
                    : 0 401 840 750
                                                                               180-225-240-285-300-
Combination no.
                                                        SD ang. spacing CS: 345
Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE12P110A320L$3837-2
EP type number : 0 411 810 711
                                                        SD mark cyl. no. : 12
Governor
Governor design. : RQV350...1150PA378-4
                                                        BASIC SETTING
Governer no. : 0 421 813 521
                                                        1st speed
                                                                        1/mi: 1150
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                        Contr.-rod trav.mm: 11.40...11.50
Engine
                     : OM 424
                                                        Del.quantity cm3/: 12.2...12.4
1st version kW : 309.0
                                                                       100H.: (11.9...12.7)
              1/min: 2300
Speed
                                                        Dispersion
                                                                       cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                       100H.: (0.8)
Calibrating-oil inlet temp. °C
                                                        2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.7...7.9

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/: 0.4
                     : 38...42
Overflow valve
                     : 1 417 413 025
                                                                       100H.: (0.7)
Inlet press., bar: 1.50
Over flow
                                                        SLEEVE POSITION
 quantity min. 1/h: 150...170
                                                        Control-lever position
                                                                     Degree: -1
Calibrating nozzle-holder
                                                                       17min: 1200
                                                        Speed
 assembly
              : 0 681 343 009
                                                        Cont.-rod travelmm: 15.20...17.80
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                        1st version
                                                        Speed 1/min: 1150
Del.quantity cm3/: 122.0...124.0
1000H.: (119.0...127.0)
Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                                                                      1000H.: (8.00)
                    : 6.00x1.50x600
x Length mm
                                                        HIGHEST RATED SPEED
(A) Injection pump setting values
                                                        1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                        Control-lever
                                                         position degrees: 60...68
    per values ____
                                                        Testing:
START OF DELIVERY
                                                        1st c-rod trav.mm: 10.40
                                                          Speed 1/min: 1170...1180
Test pressure, bar: 25...27
                                                        2nd c-rod trav.mm: 4.00
K27
```

1/min: 1235...1265 Speed 1/min : 1300 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 16...22 Testing: Speed 1/min : 10° C-rod trav.mm min : 9.00 1/min : 350 mm : 7.40...7.60 Speed C-rod trav.mm CONSTANT REGULATION 1/min: 375...485 Speed SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS 1/min : 600 Speed Del.quantity cm3/: 96.0...100.0 1000H.: (93.0...103.0) cm3/: 6.00 1000H.: (9.00) Dispersion 1/min : 1150 Speed Del.quantity cm3/: 90.0...94.0 1000H: (87.0...97.0) Dispersion cm3/: 6.00 1000H: (9.00)

Remarks:

\* = Set at reduced-delivery stop.

```
: 12- 1- 5- 9- 8- 3
- 4- 11- 10- 2- 6- 7
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                          Cam sequence
Note inst. in remarks column
                      : MB 21,9 0
Test sheet
Edition
                      : 12.09.86
                                                          SD ang. spacing CS: 0-45-60-105-120-165-
Superceeded
                                                                                  180-225-240-285-300-
Calibrating oil
                     : ISO-4113
                                                          Tolerance + - 0
                                                                                : 0.50 (0.75)
Combination no.
                     : 0 401 840 751
                                                          SD mark cyl. no. : 12
Injection pump
                     : PE12P12OA32OL$3838
Pump designation
                                                          BASIC SETTING
EP type number
                     : 0 411 820 721
Governor
                                                          1st speed
                                                                           1/mi: 1150
Governor design. : RQV350...1150PA493-1
Governor no. : 0 421 813 363
                                                          Contr.-rod trav.mm: 11.60...11.70
Customer-spec. information
                                                          Del.quantity cm3/: 17.5...17.7
Customer
                     : DAIMLER-BENZ
                                                                          100H.: (17.2...18.0)
Engine
                     : OM 424 LA
                                                          Dispersion
                                                                         cm3/:0.5
1st version kW : 441.0
               1/min: 2300
Speed
                                                                          100H.: (0.8)
                                                          2nd speed 1/min: 350.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/: 1.4...2.2

100H.: (1.1...2.5)

Dispersion cm3/: 0.8
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                     : 38...42
                                                                         100H.: (0.7)
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                          SLEEVE POSITION
                 : 1 688 901 019
 assembly
                                                          Control-lever position
                                                          Degree: -1
Speed 1/min: 1150
Cont.-rod travelmm: 15.20...17.80
Opening
                     : 207...210
 pressure, bar
                                                          FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 d ameter mm
                     : 0,8
                                                          1st version
                                                          Speed
                                                                         1/min: 1150
                                                         Charge press, nPa : 600
Del.quantity cm3/ : 175.0...177.0
1000H.: (172.0...180.0)
Dispersion cm3/ : 5.00
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                : 6.00x1.50x1000
                                                                        1005H.: (8.00)
x Length mm
(A) Injection pump setting values
                                                          HIGHEST RATED SPEED
    Insp. values in parentheses
Set constant delivery quant.
                                                          1st version
                                                          Control-lever
                                                           position degrees: 54...62
    per values ____
                                                          Testing:
START OF DELIVERY
                                                          1st c-rod trav.mm : 10.60
Speed 1/min : 1190...1200
Test pressure, bar: 25...27
                     : 4.00...4.10
Prestroke mm
                                                          2nd c-rod trav.mm : 4.00
                                                                       1/min : 1240...1270
                     : (3.95...4.15)
                                                            Speed
Contr.-rod trav.mm: 9.00...12.00
                                                                        1/min : 1350
                                                          4th speed
L01
```

```
: 0.00...1.00
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 4...12
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 6.70
            1/min : 350
Speed
                   : 5.00...5.20
C-rod trav.mm
CONSTANT REGULATION
            1/min : 400...600
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
Speed
             1/min : 500
Pressure
            hPa : 600
Contr.-rod trav.mm: 11.60...11.70
Measurement
            1/min: 500
Speed
1st pressure hPa
                   : 10.40...10.50
  C-rod trav.mm
                  : 390
2nd pressure hPa
                 : 11.30...11.40
: 300
  C-rod trav.mm
3rd pressure hPa
  C-rod trav.mm
                   : 10.60...10.80
SWITCH-OVER POINT
Speed
            1/min : 270 (290)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 600
            1/min : 650
Speed
Del.quantity cm3/: 171.0...179.0
             1000H.: (168.0...182.0)
            cm3/: 7.50
1000H.: (-)
Dispersion
Charge press. hPa:
             1/min : 500
Speed
Del.quantity cm3/: 143.0...145.0
            1000H.: (140.0...148.0)
cm3/: 7.50
Dispersion
            1000H.: (-)
Remarks:
```

Snow plough

APPLICATION

L02

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                                  : 4.00...4.10
                                                            Prestroke mm
                                                                                  : (3.95...4.15)
                                                           Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8- 3
- 4- 11- 10- 2- 6- 7
Note inst. in remarks column
Test sheet
                      : MB 21,9 P
Edition
                      : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                            SD ang. spacing CS: 0-45-60-105-120-165-
Combination no.
                      : 0 401 840 752
                                                                                    180-225-240-285-300-
                                                            SD ang. spacing CS: 345
Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE12P12OA32OLS3839
EP type number : 0 411 820 722
                                                            SD mark cyl. no. : 12
Governor
Governor design. : RQV350...1050PA693
Governer no. : 0 421 813 416
                                                            BASIC SETTING
                                                                             1/mi: 1050
                                                            1st speed
Customer-spec. information
Customer
                      : DAIMLER-BENZ
                                                            Contr.-rod trav.mm: 9.70...9.80
Engine
                      : 0M 424 A
                                                            Del.quantity cm3/: 14.8...15.0
1st version kW : 357.0
                                                                            100H.: (14.5...15.3)
Speed
               1/min: 2100
                                                                           cm3/:0.5
                                                            Dispersion
TEST BENCH REQUIREMENTS
                                                                            100H.: (0.9)
Calibrating-oil inlet temp. °C
                                                           2nd speed 1/min: 350.0

Contr.-rod trav. m: 4.5...4.7

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/: 0.8

100H.: (1.2)
                    : 38...42
Overflow valve
                      : 1 417 413 025
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                            SLEEVE POSITION
 assembly
                    : 1 688 901 019
                                                            Control-lever position
                                                           Degree: -1
Speed 1/min: 1180
Cont.-rod travelmm: 15.20...17.80
Opening
 pressure, bar
                    : 207...210
                                                           FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
                      : 0,8
 diameter mm
                                                            1st version
                                                                           1/min: 1050
                                                            Speed
                                                           Charge press. hPa: 700
Del.quantity cm3/: 148.0...150.0
1000H.: (145.0...153.0)
Dispersion cm3/: 5.00
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                                                                          1000H.: (9.00)
                      : 6.00x1.50x1000
x Length mm
                                                           HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                           1st version
                                                           Control-lever
    per values ____
                                                            position degrees: 54...62
START OF DELIVERY
                                                           Testing:
                                                           1st c-rod trav.mm : 8.70
Test pressure, bar: 25...27
                                                                         1/min : 1085...1095
                                                              Speed
L03
```

```
2nd c-rod trav.mm : 4.00
  Speed 1/min: 1165...1195
th speed 1/min: 1300
4th speed
  C-rod trav.mm
                  : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Testing:
Speed
             1/min : 100
C-rod trav.mm min : 6.20
             1/min : 350
Speed
                    : 4.50...4.70
C-rod trav.mm
CONSTANT REGULATION
Speed
             1/min : 350...600
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
             hPa : 700
Contr.-rod trav.mm: 9.70...9.80
Measurement
             1/min : 500
Speed
1st pressure hPa
                    : 9.30...9.50
  C-rod trav.mm
2nd pressure hPa : 360
  C-rod trav.mm
                    : 9.50...9.60
3rd pressure hPa : 320
                    : 9.40...9.60
  C-rod trav.mm
SWITCH-OVER POINT
             1/min : 270 (290)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 700
             1/min : 600
Speed
Del.quantity cm3/: 146.0...152.0
             1000H.: (143.0...155.0)
              cm3/:8.00
Dispersion
             1000H.: (12.0)
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/: 128.0...130.0
1000H.: (125.0...133.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
```

Remarks:

L04

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : KHD 19,2 A1 : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 840 754

Injection pump

Pump designation : PE12P110A920LS3173 EP type number : 0 411 810 708

Governor

Governor design. : RQV300...1150PA820

Governer no. : 0 421 813 561

Customer-spec. information Customer : KHD

Engine : BF12L513C

1st version kW : 386.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Prestroke mm : 2.80...2.90

: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 4- 9- 8- 5- 2-

11- 10- 3- 6- 7- 12	Dispersion cm3/ : 5.00 1000H.: (8.00)
SD ang. spacing <sup>o</sup> CS: 0-15-60-75-120-135- 180-195-240-255-300- 315	HIGHEST RATED SPEED  1st version  Control-lever  position degrees: 5159
Tolerance + - ° : 0.50 (0.75)	Testing:
SD mark cyl. no. : 1	1st c-rod trav.mm : 11.40 Speed 1/min : 11901200
BASIC SETTING	2nd c-rod trav.mm : 4.00
1st speed 1/mi: 1150	Speed 1/min: 12901320 4th speed 1/min: 1400 C-rod trav.mm: 0.001.00
Contrrod trav.mm: 12.4012.50	LOWEST RATED SPEED I
Del.quantity cm3/: 16.116.3	Control-lever position degrees: 1523
100H.: (15.816.6)	Testing:
Dispersion cm3/: 0.5	Speed 1/min: 100
100H.: (0.8)	C-rod trav.mm min : 8.10 Speed 1/min : 300
2nd speed 1/min: 300.0	C-rod trav.mm : 6.606.80
Contrrod trav. m: 6.66.8	CONSTANT REGULATION
Del.quantity cm3/: 1.52.1   100H.: (1.22.3)	Speed 1/min: 300450
Dispersion cm3/: 0.7 1 100H.: (1.0)	TORQUE CONTROL Dimension a mm : 0.40
	Torque-control curve - 1st version
(B) Setting of injection pump with lexternally-mounted governor l	1st speed 1/min : 1150 C-rod trav <sub>emm</sub> : 12.4012.50
SLEEVE TRAVELS	2nd speed 1/min: 750 C-rod trav.mm: 12.6012.80
1st speed 1/min: 300	3rd speed 1/min: 1000
Sleeve travel mm: 1.201.40     2nd speed	C-rod trav.mm : 12.5012.60
Sleeve travel mm: 2.302.60	compensator (LDA,ADA,ALDA)
3rd speed 1/min: 800	
4th speed	1st version Setting
5th speed 1/min: 1280	Speed 1/min: 450
Sleeve travel mm: 9.309.60	Pressure hPa : 750 Contrrod trav.mm: 12.8012.90
SLEEVE POSITION	
Control-lever position	Measurement Speed 1/min: 450
Speed 17min: 1190   Controd travelmm: 15.2017.80	1st pressure hPa : -
	C-rod trav.mm : 10.8010.90
FULL-LOAD DELIV. AT FULL-LOAD STOP	2nd pressure hPa : 490 C-rod trav.mm : 12.3012.40
1st version   Speed 1/min: 1150	3rd pressure hPa : 360 C-rod trav.mm : 11.1011.30
Charge press. hPa: 750   Del.quantity cm3/: 161.0163.0	SWITCH-OVER POINT
1000H.: (158.0166.0)	Speed 1/min : 220 (240)

L06

## FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 750 Speed 1/min: 750 Del.quantity cm3/: 164.0...168.0 1000H.: (161.0...171.0)

Charge press. hPa: -Speed 1/min: 450 Del.quantity cm3/: 123.0...127.0 1000H.: (120.0...130.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : KHD 19.2 C : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 840 755

Injection pump

Pump designation : PE12P110A920LS3173 EP type number : 0 411 810 708

Governor

Governor design. : RQV750PA823 Governer no. : 0 421 813 573

Customer-spec. information Customer

Engine : BF12L513C

1st version kW : 263.0 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Prestroke mm : 2.80...2.90

: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 4- 9- 8- 5- 2-

11- 10- 3- 6- 7- 12 SD ang. spacing<sup>0</sup>CS: 0-15-60-75-120-135-1 80-195-240-255-300-3 15 Tolerance + - 0 : 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1/mi: 700 1st speed Contr.-rod trav.mm: 12.00...12.10 Del.quantity cm3/: 15.6...15.8 100H.: (15.3...16.1) Dispersion cm3/:0.5100H.: (0.8) 1/min: 300.0 2nd speed Contr.-rod trav. m: 6.6...6.8 Del.quantity cm3/: 1.5...2.1 100H.: (1.2...2.3) cm3/: 0.7 100H.: (1.0) Dispersion FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 700 Speed Del.quantity cm3/: 156.0...158.0 1000H.: (153.0...161.0) cm3/ : 5.00 1000H.: (8.00) Dispersion HIGHEST RATED SPEED 1st version Control-lever position degrees: 24...32 Testing: 1st c-rod trav.mm : 11.00 1/min : 750...755 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min : 780...787 1/min: 820 4th speed C-rod trav.mm : 0.00...1.00

Generator

Remarks: APPLICATION

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 4.20...4.30
                                                       Prestroke mm
                                                                            : (4.15...4.35)
                                                       Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8-
Note inst. in remarks column
                                                                              - 4- 11- 10- 2- 6- 7
Test sheet
                    : MAN 20,9 X
                    : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       SD ang. spacing CS: 0-45-60-105-120-165-
Combination no.
                    : 0 401 840 756
                                                                              180-225-240-285-300-
                                                                              345
                                                       Tolerance + - D
                                                                           : 0.50 (0.75)
Injection pump
Pump designation : PE12P12OA520/4LS3840 EP type number : 0 411 820 724
                                                       SD mark cyl. no.
                                                                          : 12
Governor
Governor design. : RQ250/1150PA739
                                                       BASIC SETTING
Governer no.
                    : 0 421 801 279
                                                       1st speed
                                                                       1/mi: 1150
Customer-spec. information
Customer
                    : MAN
                                                       Contr.-rod trav.mm: 11.40...11.50
Engine
                    : D2842LE
                                                       Del.quantity cm3/: 19.5...19.7
1st version kW
                    : 529.0
                                                                      100Ha: (19.2...20.0)
TEST BENCH REQUIREMENTS
                                                       Dispersion
                                                                     cm3/:0.5
Calibrating-oil inlet temp. °C
                                                                      100H.: (0.9)
                    : 38...42
                                                                     1/min: 250.0
                                                       2nd speed
                                                       Contr.-rod trav. m: 6.9...7.1
Overflow valve
                                                       Del.quantity cm3/: 1.7...2.3
                    : 1 417 413 025
                                                                     100H.: (1.4...2.6)
cm3/: 0.8
Inlet press., bar : 1.50
                                                       Dispersion
                                                                      100H.: (1.2)
Calibrating nozzle-holder
                 : 1 688 901 019
                                                       SLEEVE POSITION
 assembly
                                                       Control-lever position
Opening
                                                                    Degree: -2
                    : 207...210
                                                                     17min: 550
 pressure, bar
                                                       Speed
                                                       Cont.-rod travelmm: 19.20...20.80
Perforated-plate
 diameter mm
                    : 0.8
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                       1st version
                                                      Speed 1/min: 1150
Charge press. hPa: 1000
Del.quantity cm3/: 195.0...197.0
1000H.: (192.0...200.0)
Dispersion cm3/: 5.00
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                   : 6.00X1.50X1000
x Length mm
                                                                    1000H.: (9.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       HIGHEST RATED SPEED
    per values ____
                                                       Setting point:
                                                                   1/min : 550
                                                       Speed
START OF DELIVERY
                                                       Contr.-rod trav.mm: 20.0
Test pressure, bar: 25...27
                                                       Testing:
                                                       1st c-rod trav.mm : 10.40
```

Speed 1/min: 1220...1235 2nd c-rod trav.mm: 4.00 Speed 1/min : 1415...1445 LOWEST RATED SPEED I Control-lever position degrees: 11...19 Setting point w/out aux. spring Speed 1/min : 250 Contr.-rod trav.mm: 7.0 Testing: 1/min: 100 Speed C-rod trav.mm min: 8.50 1/min : 250 Speed : 6.90...7.10 C-rod trav.mm mm : 2.00 1/min : 315...355 C-rod trav.mm Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1150 C-rod trav.mm : 11.40...11.50 2nd speed 1/min : 750 C-rod trav.mm : 11.40...11.60 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 1000 Pressure Contr.-rod trav.mm: 11.40...11.50 Measurement 1/min : 500 Speed 1st pressure hPa : -: 8.90...9.00 C-rod trav.mm 2nd pressure hPa : 300 : 9.20...9.30 C-rod trav.mm 3rd pressure hPa : 520 C-rod trav.mm : 10.70...11.00 SWITCH-OVER POINT 1/min : 170 (190) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 1000 Speed 1/min: 750 Del.quantity cm3/: 200.0...206.0 1000H.: (197.0...209.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/ : 119.0...121.0 1000H.: (116.0...124.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition : MAN 20,9 X1 : 12.09.86 Superceeded Calibrating oil : ISO-4113 Combination no. : 0 401 840 757 Injection pump Pump designation : PE12P12OA520/4L\$3840 EP type number : 0 411 820 724 Governor Governor design. : RQV250...1150PA668-7 Governer no. : 0 421 813 481 Customer-spec. information Customer : MAN : D2842LE Engine 1st version kW : 560.0 1/min: 2300 Speed TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder assembly : 1 688 901 019 Opening : 207...210 pressure, bar Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

START OF DELIVERY Test pressure, bar: 25...27

per values \_\_\_\_

Prestroke mm : 4.20...4.30 : (4.15...4.35) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 12- 1- 5- 9- 8- 3 - 4- 11- 10- 2- 6- 7 SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-SD ang. spacing CS: 345 Tolerance + - : 0.50 (0.75) SD mark cyl. no. : 12 BASIC SETTING 1st speed 1/mi: 1150 Contr.-rod trav.mm: 11.90...12.00 Del.quantity cm3/: 20.0...20.2 100H.: (19.7...20.5) Dispersion cm3/:0.5100H.: (0.9) 1/min: 250.0 2nd speed Contr.-rod trav. m: 6.9...7.1
Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/: 0.8 100H.: (1.2) (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS 1st speed 1/min: 350 Sleeve travel mm: 2.00...2.50 2nd speed 1/min: 900 Sleeve travel mm: 6.70...6.90 3rd speed 1/min: 1150 Sleeve travel mm: 8.50...8.60 SLEEVE POSITION Control-lever position Degree: -1 1/min: 1150 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1150 Del.quantity cm3/: 200.0...202.0 1000H.: (197.0...205.0)

Dispersion cm3/ : 5.00 1000H.: (9.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm: 10.90 1/min : 1190...1200 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1320...1350 th speed 1/min: 1450 C-rod trav.mm: 0.00...1.00 4th speed LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.50 1/min : 250 Speed C-rod trav.mm : 6.90...7.10 C-rod trav.mm : 2.00 1/min : 400...460 Speed SWITCH-OVER POINT

Speed 1/min: 200 (220)

Remarks:

: MAN-NR. 2-7826

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.20...4.30 Prestroke mm : (4.15...4.35) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 12- 1- 5- 9- 8-Test sheet - 4- 11- 10- 2- 6- 7 : MAN 20,9 X2 : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-180-225-240-285-300-Combination no. : 0 401 840 759 SD ang. spacing CS: 345 Tolerance + - : 0.50 Injection pump : 0.50 (0.75) Pump designation : PE12P12OA520/4LS3840 EP type number : 0 411 820 724 SD mark cyl. no. : 12 Governor Governor design. : RQ1200PA664-2 BASIC SETTING Governer no. : 0 421 801 355 1st speed 1/mi: 1150 Customer-spec, information Contr.-rod trav.mm: 11.90...12.00 Customer : MAN : D2842LE Engine Del.quantity cm3/: 20.0...20.2 1st version kW : 560.0 100Ha: (19.7...20.5) Speed 1/min: 2400 Dispersion cm3/:0.5TEST BENCH REQUIREMENTS 100H.: (0.9) Calibrating-oil inlet temp. °C : 38...42 1/min: 250.0 2nd speed Centr.-rod trav. m: 6.9...7.1 Del.quantity cm3/: 1.7...2.3 Overflow valve : 1 417 413 025 100H.: (1.4...2.6) cm3/: 0.8Dispersion 100H.: (1.2) Inlet press., bar: 1.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 1 688 901 019 assembly 1st version Opening 1/min: 1150 Speed Del.quantity cm3/: 200.0...202.0 1000H.: (197.0...205.0) : 207...210 pressure, bar Dispersion cm3/: 5.00 Perforated-plate 1000H.: (9.00) diameter mm : 0,8 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 075 Testing: 1st c-rod trav.mm: 10.90 Outside diameter x Wall thickness 1/min : 1225...1240 Speed : 8.00x2.50x1000 2nd c-rod trav.mm: 4.00 x Length mm 1/min : 1285...1315 Speed (A) Injection pump setting values 4th speed 1/min : 1400 Insp. values in parentheses Set constant delivery quant. C-rod trav.mm : 0.00...1.00 per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 Remarks: : MAN-NR. 2-7831

APPLICATION Generator set L16

```
: 4.20...4.30
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
                                                                          : (4.15...4.35)
                                                      Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                                         : 12- 1- 5- 9- 8-
                                                      Cam sequence
Test sheet
                                                                            - 4- 11- 10- 2- 6- 7
                    : MAN 20,9 Y
Edition
                    : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                      SD ang. spacing<sup>0</sup>CS: 0-45-60-105-120-165-
Combination no.
                   : 0 401 840 760
                                                                            180-225-240-285-300-
                                                      SD ang. spacing CS: 345
Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE12P12OA520/4LS3841
EP type number : 0 411 820 725
                                                      SD mark cyl. no. : 12
Governor
Governor design. : RQ750PA663-7
                                                      BASIC SETTING
Governer no.
                   : 0 421 801 331
                                                                     1/mi: 700
                                                      1st speed
Customer-spec. information
Customer
                                                      Contr.-rod trav.mm: 13.10...13.20
                   : MAN
                                                      Del.quantity cm3/: 21.5...21.7
Engine
                    : D2842LE
                                                                    100H.: (21.2...22.0)
1st version kW : 380.0
              1/min: 1500
Speed
                                                                    でm3/: 0.5
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.9)
Calibrating-oil inlet temp. °C
                                                      2nd speed 1/min: 300.0
Contr.-rod trav. m: 6.0...6.2
Del.quantity cm3/: 1.7...2.3
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                                    100H.: (1.4...2.6)
                                                                    cm3/:0.8
                                                      Dispersion
                                                                    100H.: (1.2)
Inlet press., bar : 1.50
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
 assembly
                   : 1 688 901 019
                                                      1st version
                                                                    1/min: 700
Opening
                                                      Speed
                                                      Del.quantity cm3/: 215.0...217.0
1000H.: (212.0...220.0)
                   : 207...210
 pressure, bar
                                                                   cm3/ : 5.00
Perforated-plate
                                                      Dispersion
                                                                   1000H.: (9.00)
 diameter mm
                    : 0,8
                                                      HIGHEST RATED SPEED
Test inj. tubing
                   : 1 680 750 067
                                                      1st version
                                                      Control-lever
Outside diameter
                                                       position degrees: -
x Wall thickness
                    : 6.00x1.50x1000
x Length mm
                                                      Testing:
                                                      1st c-rod trav.mm: 12.10
                                                     Speed 1/min: 750...755
2nd c-rod trav.mm: 4.00
Speed 1/min: 797...810
4th speed 1/min: 950
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
    per values ____
                                                        C-rod trav.mm : 0.00...1.00
START OF DELIVERY
                                                      LOWEST RATED SPEED I
Test pressure, bar: 25...27
```

Testing: Speed	1/min	:	100	

Remarks: APPLICATION : MAN-NR. 2-7828

Generator set

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                                                     SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
Test sheet
                   : DAF 11,6 I8
Edition
                   : 12.09.86
Superceeded
                  : 11.85
Calibrating oil : ISO-4113
                                                     BASIC SETTING
Combination no.
                  : 0 401 846 463
                                                     1st speed
                                                                    1/mi: 850
Injection pump
                                                     Contr.-rod trav.mm: 12.00...12.10
Pump designation : PE6P110A320RS372-1
EP type number : 0 411 816 145
                                                     Del.quantity cm3/: 13.7...13.9
Governor
Governor design. : RQ250/1100PA417-1
                                                                   100H.: (13.4...14.1)
Governer no.
                    : 0 421 801 205
                                                                   cm3/:0.4
                                                     Dispersion
Customer-spec. information
Customer
                                                                   100H.: (0.7)
Engine
                    : DKTD 1160
                                                     2nd speed
                                                                   1/min: 250.0
                                                     Contr.-rod trav. m: 6.6...6.8
                                                     Del.quantity cm3/: 0.7...1.1
100H:: (0.4...1.3)
Dispersion cm3/: 0.4
100H:: (0.7)
1st version kW : 191.0
Speed
              1/min: 2200
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. "C
                                                     SLEEVE POSITION
                    : 38...42
                                                     Control-lever position
                                                                 Degree: -1
1/min: 700
Overflow valve
                                                     Speed
                    : 1 417 413 025
                                                     Cont.-rod travelmm: 15.60...16.40
Inlet press., bar: 1.50
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                                                     1st version
                   : 0 681 343 009
 assembly
                                                     Speed
                                                                   1/min: 850
                                                    Charge press. hPa: 700
Del.quantity cm3/: 137.0...139.0
1000H.: (134.5...141.5)
Opening
 pressure, bar : 172...175
                                                                  cm3/ : 4.00
                                                     Dispersion
                                                                  1000H.: (7.50)
Test inj. tubing : 1 680 750 015
                                                     HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                     Setting point:
x Length mm
                : 6.00x1.50x600
                                                                 1/min : 700
                                                     Contr.-rod trav.mm: 16.0
(A) Injection pump setting values
    Insp. values in parentheses
                                                     Testing:
    Set constant delivery quant.
                                                     1st c-rod trav.mm : 11.00
    per values
                                                       Speed 1/min: 1145...1160
                                                     2nd c-rod trav.mm : 4.00
                                                                1/min : 1220...1250
1/min : 1350
START OF DELIVERY
                                                       Speed
Test pressure, bar: 25...27
                                                     4th speed
                                                       C-rod trav.mm : 0.00...1.00
Prestroke mm
                    : 2.80...2.90
                    : (2.75...2.95)
                                                    LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                    Control-lever
L19
```

position degrees: 8...16 Setting point w/out aux. spring 1/min : 250 Speed Contr.-rod trav.mm: 6.7 Testing: 1/min : 100 Speed C-rod trav.mm min: 7.80 Speed 1/min : 250 C-rod trav.mm 2.00 : 6.60...6.80 C-rod trav.mm Speed 1/min : 460...500 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 850 C-rod trav.mm : 12.00...12.10 2nd speed 1/min: 1100 C-rod trav.mm : 11.90...12.10 compensator (LDA, ADA, ALDA) 1st version Setting Speed 1/min : 600 hPa : 700 Pressure Contr.-rod trav.mm: 12.00...12.10 Measurement Speed 1/min: 500 1st pressure hPa : -C-rod trav.mm : 11.40...11.60 2nd pressure hPa : 300 C-rod trav.mm : 11.80...11.90 3rd pressure hPa : 280 C-rod trav.mm : 11.50...11.70 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 128.0...130.0 1000H.: (125.5...132.5) Remarks: See VDT-I-420/115

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                              : 1-5-3-6-2-4
                                                          Cam sequence
Note inst. in remarks column
                                                          SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                      : DAF 11,6 T6
                     : 12.09.86
: 5.85
Edition
Superceeded
Calibrating oil : ISO-4113
                                                          BASIC SETTING
                      : 0 401 846 465
Combination no.
                                                                          1/mi: 600
                                                          1st speed
Injection pump
                                                          Contr.-rod trav.mm: 11.40...11.50
Pump designation : PE6P100A320R$384-1
EP type number
                     : 9 411 806 189
                                                          Del.quantity cm3/: 9.8...10.0
Governor
Governor design. : RQ225/1000PA571
Governer no. : 0 421 801 141
                                                                         100H<sub>3</sub>: (9.6...10.2)
                                                                         cm3/:0.3
                                                          Dispersion
Customer-spec. information
Customer
                     : DAF
                                                                         100H.: (0.6)
                                                          2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/: 0.9...1.3

100H.: (0.6...1.5)

Dispersion cm3/: 0.3

100H.: (0.5)
Engine
                      : DKDL 1160
1st version kW : 125.0
Speed
               1/min: 2000
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                          SLEEVE POSITION
                     : 38...42
                                                          Control-lever position
                                                          Degree: -1
Speed 1/min: 550
Cont.-rod travelmm: 15.60...16,40
Overflow valve
                      : 1 417 413 025
                                                          FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                          1st version
                    : 0 681 343 009
 assembly
                                                                         1/min: 600
                                                          Speed
                                                          Del.quantity cm3/: 98.0...100.0
1000H.: (96.0...102.0)
Dispersion cm3/: 3.50
Opening
 pressure, bar
                    : 172...175
                                                                        1000H.: (6.00)
                    : 1 680 750 015
                                                          HIGHEST RATED SPEED
Test inj. tubing
Outside diameter
                                                          Setting point:
x Wall thickness
                                                                       1/min : 550
                                                          Speed
x Length mm
                     : 6.00x1.50x600
                                                          Contra-rod trav.mm: 16.0
(A) Injection pump setting values
                                                          Testing:
    Insp. values in parentheses
Set constant delivery quant.
                                                          1st c-rod trav.mm : 9.60
                                                            Speed
                                                                      1/min: 1045...1060
    per values
                                                          2nd c-rod trav.mm : 4.00
                                                                       1/min : 1100...1130
1/min : 1250
                                                            Speed
START OF DELIVERY
                                                          4th speed
Test pressure, bar: 25.,.27
                                                            C-rod trav.mm : 0.00...1.00
Prestroke mm
                     : 3.20...3.30
                                                         LOWEST RATED SPEED I
                     : (3.15...3.35)
                                                          Setting point w/out aux, spring
Contr.-rod trav.mm: 9.00...12.09
                                                                       1/min : 250
                                                          Speed
L21
```

Contr.-rod trav.mm: 7.6 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.40 Speed 1/min: 250 C-rod trav.mm : 7.50...7.70 C-rod trav.mm : 2.00 1/min : 345...385 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 600 C-rod trav.mm : 11.40...11.50 2nd speed 1/min: 1000 C-rod trav.mm : 10.60...10.80 3rd speed 1/min : 820 C-rod trav.mm : 11.20...11.40 4th speed 1/min : 900 C-rod trav.mm : 10.80...11.10 FUEL-DELIVERY CHARACTERISTICS 1/min : 1000 Speed Del.quantity cm3/: 93.0...97.0 1000H.: (90.5...99.5)

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 1-5-3-6-2-4
                                                     Cam sequence
Note inst. in remarks column
Test sheet
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : DAF 11,6 N3
Edition
                   : 12.09.86
Superceeded
                   : 11.85
Calibrating oil : ISO-4113
                                                     BASIC SETTING
Combination no.
                   : 0 401 846 469
                                                                    1/mi: 850
                                                     1st speed
Injection pump
                                                     Contr.-rod trav.mm: 12.30...12.40
Pump designation : PE6P110A320RS407-1
EP type number
                                                     Del.quantity cm3/: 14.1...14.3
                   : D 411 816 147
Governor
Governor design. : RQ250/1100PA428/2R
                                                                   100H.: (13.8...14.5)
                   : 0 421 801 093
Governer no.
                                                     Dispersion
                                                                   cm3/:0.4
Customer-spec. information
Customer
                   : DAF
                                                                   100H.: (0.7)
                                                                   1/min: 250.0
Engine
                   : DKTL1160
                                                     2nd speed
                                                     Contr.-rod trav. m: 7.1...7.3
1st version kW : 185.0
                                                     Del.quantity cm3/: 1.0...1.4
                                                                   100H.: (0.7...1.6)
Speed
              1/min: 2200
                                                                   cm3/: 0.4
100H.: (0.7)
                                                     Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil imlet temp. <sup>D</sup>C
                                                     SLEEVE POSITION
                   : 38...42
                                                     Control-lever position
                                                                  Degree: -1
1/min: 600
Overflow valve
                                                     Speed
                    : 1 417 413 025
                                                     Cont.-rod travelmm: 15.60...16.40
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                     1st version
                   : 0 681 343 009
 assembly
                                                                   1/min: 850
                                                     Speed
                                                     Charge press. hPa: 700
Del.quantity cm3/: 141.0...143.0
1000H:: (138.5...145.5)
Opening
 pressure, bar : 172...175
                                                     Dispersion
                                                                  cm3/ : 4.00
                                                                  1000H .: (7.50)
Test inj. tubing : 1 680 750 015
                                                     HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                     Setting point:
                   : 6.00x1.50x600
                                                                 1/min : 600
x Length mm
                                                     Contr.-rod trav.mm: 16.0
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     Testing:
                                                     1st c-rod trav.mm : 11.30
                                                     Speed 1/min: 1145...1160
2nd c-rod trav.mm: 4.00
    per values ____
                                                                1/min : 120...1230
START OF DELIVERY
                                                       Speed
Test pressure, bar: 25...27
                                                                 1/min : 1550
                                                     4th speed
                                                       C-rod trav.mm : 0.00...1.00
Prestroke mm
                   : 2.80...2.90
                   : (2.75...2.95)
                                                     LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                     Setting point w/out aux. spring
L23
```

Speed 1/min: 250 Contr.-rod trav.mm: 7.2 Testing: 1/min : 100 Speed C-rod trav.mm min: 7.80 Speed 1/min: 250 C-rod trav.mm: 7.10...7.30 C-rod trav.mm: 2.00 Speed 1/min: 345...385 TORQUE CONTROL Torque-control curve - 1st version 1/min : 850 1st speed C-rod trav.mm : 12.30...12.40 2nd speed 1/min : 1100 C-rod trav.mm : 12.20...12.40 compensator (LDA\_ADA\_ALDA) 1st version Setting 1/min : 600 Speed hPa : 700 Pressure Contr.-rod trav.mm: 12.30...12.40 Measurement 1/min : 600 Speed 1st pressure hPa : -C-rod trav.mm : 12.00...12.10 2nd pressure hPa : 300 C-rod trav.mm : 12.10...12.20 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 137.0...139.0 1000H.: (134.5...141.5) Remarks: See VDT-I-420/115 **APPLICATION** 

0mn ibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: DAF 11.6 N4 : 12.09.86 Test sheet Edition Superceeded : 6.85 Calibrating oil : ISO-4113

Combination no. : 0 401 846 474

Injection pump

Pump designation : PE6P110A320R\$407-1 EP type number : 0 411 816 147

Governor

Governor design. : RQ275/1000PA641-1 Governer no. : 0 421 801 175

Customer-spec. information Customer

Engine : DKCL 1160

1st version kW : 155.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

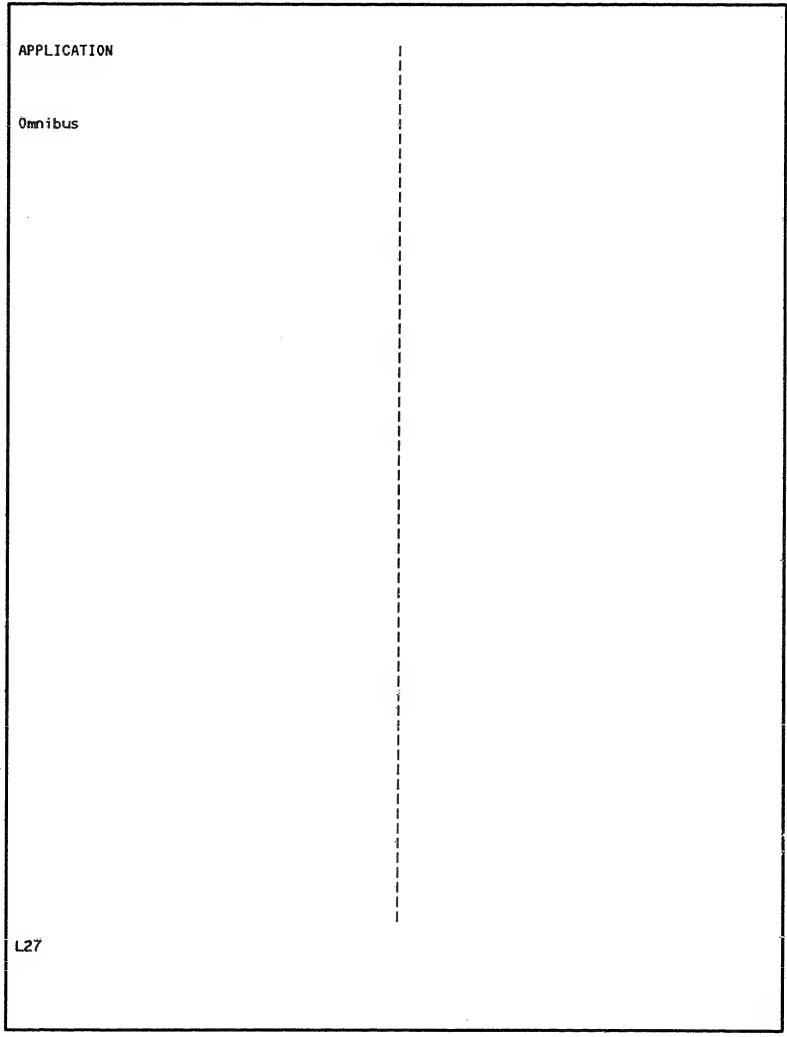
: 2.80...2.90 Prestroke mm

: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5- 3- 6- 2- 4 Speed 1/min : 275 Contr.-rod trav.mm: 7.1 Testing: SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Speed 1/min : 100 C-rod trav.mm min : 8.60 Speed 1/min: 275 C-rod trav.mm: 7.00...7.20 C-rod trav.mm: 2.50 Speed 1/min: 335...375 BASIC SETTING 1st speed 1/mi: 600 Contr.-rod trav.mm: 12.30...12.40 TORQUE CONTROL Torque-control curve - 1st version Del.quantity cm3/: 13.9...14.1 1st speed 1/min: 600 C-rod trav.mm : 12.50...12.60 100H.: (13.7...14.4) 2nd speed 1/min: 1000 C-rod trav.mm : 11.10...11.30 3rd speed 1/min: 740 Dispersion cm3/:0.4C-rod trav.mm : 12.10...12.30 100H.: (0.7) 4th speed 1/min: 875 C-rod trav.mm : 11.40...11.70 2nd speed 1/min: 275.0 Contr.-rod trav. m: 7.0...7.2 Del.quantity cm3/: 0.9...1.4 100H.: (0.6...1.6) Dispersion cm3/: 0.4 100H.: (0.7) compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min: 600 SLEEVE POSITION hPa : 700 Pressure Control-lever position Contr.-rod trav.mm: 12.30...12.40 Degree: -1 1/min: 600 Speed Measurement Cont.-rod travelmm: 15.60...16.40 1/min : 600 Speed FULL-LOAD DELIV. AT FULL-LOAD STOP 1st pressure hPa : -C-rod trav.mm : 12.10...12.20 1st version 2nd pressure hPa : 275 Speed 1/min: 600 Charge press. hPa: 700 Del.quantity cm3/: 139.5...141.5 1000H.: (137.0...144.0) Dispersion cm3/: 4.00 C-rod trav.mm : 12.20...12.30 FUEL-DELIVERY CHARACTERISTICS 1st version 1000H.: (7.50) Charge press. hPa : 700 Speed 1/min : 1000 Del.quantity cm3/: 115.0...119.0 1000H.: (112.0...122.0) HIGHEST RATED SPEED Charge press. hPa : -Speed 1/min : 600 Setting point: 1/min : 600 Contr.-rod trav.mm: 16.0 Del.quantity cm3/: 137.0...139.0 1000H.: (134.5...141.5) Testing: 1st c-rod trav.mm : 10.10 Speed 1/min: 1045...1060 2nd c-rod trav.mm : 4.00 Speed 1/min : 1105...1135 4th speed 1/min : 1300 Remarks: See VDT-I-420/115 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring

**L26** 



SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0,50(0,75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column SD mark cyl. no. : 1 : VOL 7,1 A 4 Test sheet : 11.86 Edition BASIC SETTING Superceeded Calibrating oil : ISO-4113 1/mi: 700 1st speed Combination no. : 0 401 846 505 E Contr.-rod trav.mm: 11.2...11.3 Injection pump Del.quantity cm3/: 10.9...11.1 Pump designation : PE6P110A320RS483E EP type number : D 411 816 159 100H.: (10.6. 11.4) Governor : RQV250...1100PA499-1 Governor design. Dispersion cm3/: 0.40100H.: (0.75) Customer-spec. inform: :on Customer : .JLV0 1/min: 250 2nd speed : TD71 Contr.-rod trav. m: 5.30. .. 5.50 Engine Del.quantity cm3/: 1.60...2.00 TEST BENCH REQUIREMENTS 100H.: (-) cm3/: 0.30 100H.: (0.60) Dispersion Calibrating-oil inlet temp. °C : 38...42 SLEEVE POSITION Overflow valve Control-lever position Degree: MAX. 1/min: 1200 : 1 417 413 025 Speed Cont.-rod travelmm: 15.2...17.8 Inlet press., bar: 1.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version Opening. Speed 1/min: 700 Charge press. hPa : 900 Del.quantity cm3/ : 109.0...111.0 1000H.: (106.0...114.0) pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 cm3/ : 4.00Dispersion 1000H.: (7.50) Outside diameter x Wall thickness HIGHEST RATED SPEED : 6.00x1.50x6@0 x Length mm 1st version Control-lever (A) Injection pump setting values position degrees: 54...62 Insa. values in parentheses Set constant delivery quant. Testing: 1st c-rod @rav.mm : 10.20 Speed 1/min : 1160...1170 per values \_\_\_\_ START OF DELIVERY 2nd c-rod trav.mm : 4.00 Test pressure, bar: 25...27 1/min : 1260...1290 Speed 1/min : 1400 4th speed C-rod trav.mm : 0.00...1.00 : 3.00...3.10 Prestroke mm : {2.95...3.15} Contr.-rod trav.mm: 9.00...12.00 LOWEST RATED SPEED I Cam sequence : 1-5-3-6-2-4 Control-lever position degrees: 5...13 Testing: L28

Speed 1/min : 100 C-rod trav.mm min: 6.80 Speed 1/min : 250 : 5.30...5.50 C-rod trav.mm CONSTANT REGULATION 1/min: 300...416 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 11.20...11.30 Measurement 1/min : 500 Speed 1st pressure hPa : -: 8.70...8.90 C-rod trav.mm 2nd pressure hPa : 600 C-rod trav.mm : 11.00...11.10 3rd pressure hPa : 300 C-rod trav.mm : 9.10...9.30 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 Speed 1/min : 1000 1/min: 1000 Del.quantity cm3/: 110.0...114.0 1000H.: (107.0...117.0) Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 68.0...70.0 1000H.: (65.0...73.0) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing  $^{0}$  CS: 0-60-120-180-240-300 Tolerance + -  $^{0}$  : 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 11,6M13 BASIC SETTING : 12.09.86 Edition : 5.85 : ISO-4113 Superceeded 1st speed 1/mi: 600 Calibrating oil Contr.-rod trav.mm: 11.10...11.20 Combination no. : 0 401 846 512 Del.quantity cm3/: 10.8...11.0 Injection pump Pump designation : PE6P100A320RS384-1 100H.: (10.6...11.2) EP type number : 0 411 806 189 Governor Dispersion cm3/:0.3Governor design. Governer no. : R@525/1100PA574-1 : 0 421 801 289 100H.: (0.6) 2nd speed 1/min: 225.0 Contr.-rod trav. m: 7.2...7.4 Customer-spec. information Customer : DAF Del.quantity cm3/: 1.0...1.4 Engine : DK1160V 100H.: (0.7...1.6) cm3/: 0.3 100H.: (0.5) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 inlet temp. Control-lever position Degree: -1 1/min: 550 Overflow valve Speed : 1 417 413 025 Cont.-rod travelmm: 15.60...16.40 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.50 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 600 Speed Del.quantity cm3/: 108.0...110.0 1000H.: (106.0...112.0) Opening. pressure, bar : 172...175 cm3/ : 3.50Dispersion 1000H.: (6.00) Test in | tubing : 1 680 750 015 HIGHEST RATED SPEED Outside diameter Setting point: x Wall thickness Speed 1/min : 550 Contr.-rod trav.mm: 16.0 x Length mm : 6.00x1.50x600 (A) Injection pump setting values Testing: 1st c-rod trav.mm : 9.10 Speed 1/min : 1140...1155 Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ 2nd c-rod trav.mm: 4.00 1/min: 1170...1200 Speed 1/min : 1300 START OF DELIVERY 4th speed C-rod trav.mm : 0.00...1.00 Test pressure, bar: 25...27 : 3.20...3.30 LOWEST RATED SPEED I Prestroke mm : (3.15...3.35) Control-lever Contr.-rod trav.mm: 9.00...12.00 position degrees: 8...16 Setting point w/out aux. spring Cam sequence : 1-5-3-6-2-4 Speed 1/min: 225 Contr.-rod trav.mm: 7.3 M02

Testing:

Speed 1/min: 100 C-rod trav.mm min: 7.50 Speed 1/min: 225 C-rod trav.mm: 7.20...7.40 C-rod trav.mm: 2.00 Speed 1/min: 325...365

## TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 600

C-rod trav.mm : 11.10...11.20 2nd speed 1/min : 1050 C-rod trav.mm : 10.10...10.30 3rd speed 1/min : 820

C-rod trav.mm : 10.80...11.00 4th speed 1/min : 925

C-rod trav.mm : 10.30...10.60

## FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 1050 Del.quantity cm3/: 97.0...101.0 1000H.: (94.5...103.5)

Remarks:

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet : VOL 7.1 B Edition : 12.09.86 Superceeded : 7.86
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                   : 0 401 846 517
                                                      BASIC SETTING
Injection pump
                                                      1st speed
                                                                     1/mi: 700
Pump designation : PE6P110A320RS494
EP type number : 0 411 816 162
                                                      Contr.-rod trav.mm: 10.90...11.00
Governor
Governor design.: RQV300...1200PA435-3
                                                      Del.quantity cm3/: 10.7...10.9
Governer no. : 0 421 813 498
                                                                    100H.: (10.4...11.2)
Customer-spec. information
Customer
                   : VOLVO-BM
                                                      Dispersion
                                                                    cm3/:0.4
Engine
                    : TD 71GA
                                                                    100H.: (0.8)
1st version kW : 157.0
                                                      2nd speed
                                                                    1/min: 300.0
                                                      Contri-rod trav. m: 4.6...4.8
Speed
              1/min: 2400
                                                      Del.quantity cm3/: 1.2...1.6
                                                                    cm3/:0.3
TEST BENCH REQUIREMENTS
                                                      Dispersion
                                                                    100H.: (0.6)
Calibrating-oil inlet temp. °C : 38...42
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 300
                                                        Sleeve travel mm: 1.60...1.60
Inlet press., bar : 1.50
                                                      2nd speed 1/min: 400
Calibrating nozzle-holder
                                                        Sleeve travel mm: 2.40...2.70
 assembly
                : 0 681 343 009
                                                      3rd speed 1/min: 800
                                                      Sleeve travel mm: 4.50...4.70
4th speed 1/min: 1240
Sleeve travel mm: 8.20...8.40
Opening
pressure, bar : 172...175
                                                      5th speed 1/min: 1330
                                                        Sleeve travel ma: 9.20...9.40
Test inj. tubing : 1 680 750 015
                                                      SLEEVE POSITION
Outside diameter
                                                      Control-lever position
                                                      Degree: -1
Speed 1/min: 1200
Cont.-rod travelmm: 15.20...17.80
x Wall thickness
                : 6.00x1.50x600
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
                                                                    1/min: 700
                                                      Speed
START OF DELIVERY
                                                      Charge press. hPa : 1000
                                                     Del.quantity cm3/: 107.0...109.0
1000H.: (104.0...112.0)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
Prestroke mm
                    : 3.00...3.10
                                                                   1000H.: (8.00)
                    : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
M04
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 9.90
           1/min: 1240...1250
  Speed
2nd c-rod trav.mm : 4.00
  Speed
           1/min: 1310...1340
            1/min: 1400
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 7...15
Testing:
Speed
            1/min : 100
C-rod trav.mm min: 6.10
           1/min : 300
Speed
C-rod trav.mm
                  : 4.60...4.80
CONSTANT REGULATION
           1/min : 300...480
Speed
 compensator (LDA_ADA_ALDA)
1st version
Setting
            1/min : 500
Speed
Pressure
            hPa : 1000
Contr.-rod trav.mm: 10.90...11.00
Measurement
            1/min : 500
Speed
1st pressure hPa
                  : 10.00...10.10
  C-rod trav.mm
2nd pressure hPa : 380
  C-rod trav.mm : 10.70...10.80
3rd pressure hPa : 290
                  : 10.20...10.40
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 1000
            1/min : 1000
Speed
Del.quantity cm3/: 109.5...112.5
1000H.: (106.0...116.0)
Charge press. hPa:
           1/min: 700
Speed
Del.quantity cm3/: 89.0...91.0
            1000H.: (86.0...94.0)
```

Remarks:

: D 5350

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : DAF 11.7 A1 : 12.09.86

Calibrating oil : ISO-4113

: 0 401 846 518 Combination no.

Injection pump

Pump designation : PE6P12OA32ORS495Z EP type number : 0 411 826 139

Governor

Governor design. : RQ250/1000PA766 Governer no. : 0 421 801 314

Customer-spec. information Customer

: DWS 240 Engine

1st version kW : 240.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

: 207...210 pressure, bar

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60 : (2.55...2.75) LOWEST RATED SPEED I Contr.-rod trav.mm: 9.00...12.00 Setting point w/out aux. spring Cam sequence : 1-5-3-6-2-4 Speed 1/min : 250 Contra-rod travamm: 6.8 Testing: SD ang. spacing  $^{0}$  CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Speed 1/min : 100 C-rod trav.mm min: 8.30 1/min : 250 Speed C-rod trav.mm : 6.70...6.90 BASIC SETTING C-rod trav.mm : 2.00 Speed 1/min : 330...370 1st speed 1/mi: 850 Contr.-rod trav.mm: 12.90...13.00 TORQUE CONTROL Torque-control curve - 1st version Del.quantity cm3/: 18.9...19.1 1st speed 1/min: 850 C-rod tray.mm : 13.10...13.20 100H.: (18.6...19.4) 2nd speed 1/min: 990 C-rod trav.mm : 13.00...13.20 Dispersion cm3/:0.5compensator (LDA,ADA,ALDA) 100H.: (0.9) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 7.5...7.7 1st version Setting Del.quantity cm3/: 1.6...2.2 100H.: (1.3...2.5) Dispersion cm3/: 0.8 Speed 1/min : 600 Pressure hPa : 700 Contr.-rod trav.mm: 12.90...13.00 100H.: (1.2) Measurement SLEEVE POSITION Speed 1/min: 600 Control-lever position Degree: -1 1/min: 550 1st pressure hPa : -C-rod trav.mm : 11.50...11.70 Cont.-rod travelmm: 15.60...16.40 2nd pressure hPa : 370 C-rod trav.mm : 12.50...12.60 3rd pressure hPa : 330 FULL-LOAD DELIV. AT FULL-LOAD STOP : 11.90...12.10 C-rod trav.mm 1st version Speed 1/min: 850 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa: 700
Del.quantity cm3/: 189.0...191.0
1000H.: (186.0...194.0)
Dispersion cm3/: 5.00
1000H.: (9.00) Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 141.0...143.0 1000H.: (138.0...146.0) HIGHEST RATED SPEED Setting point: Remarks: See VDT-I-420/115 Speed 1/min : 550 Contr.-rod trav.mm: 16.0 Testing: 1st c-rod trav.mm : 11.90 Speed 1/min : 1035...1050 2nd c-rod trav.mm : 4.00

M07

Speed

4th speed 1/min: 1250

C-rod tray.mm : 0.00...1.00

1/min: 1085...1115

```
: 2.50...2.60
: (2.45...2.65)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                          Prestroke mm
Note inst. in remarks column
                                                          Contr.-rod trav.mm: 9.00...12.00
                                                          Cam seguence : 1-5-3-6-2-4
Test sheet
Edition
Superceeded
                    : DAF 11.7 A
                    : 12.09.86
Superceeded : 10.85
Calibrating oil : ISO-4113
                                                          SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : 0 401 846 519
Combination no.
                                                          BASIC SETTING
Injection pump
Pump designation : PE6P120A320RS495
                                                                          1/mi: 850
                                                          1st speed
EP type number : 0 411 826 138
Governor
                                                          Contr.-rod trav.mm: 13.90...14.00
Governor design. : RQ250/1000PA766
Governer no. : 0 421 801 314
                                                          Del.quantity cm3/: 21.1...21.3
                                                                         100H.: (20.8...21.6)
Customer-spec. information
Customer
                     : DAF
                                                                         cm3/:0.5
                                                          Dispersion
                     : DWS 270
Engine
                                                                         100H.: (0.9)
1st version kW : 270.0
                                                          2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.5...7.7

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/: 0.8

100H.: (1.2)
               1/min: 2000
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. <sup>D</sup>C
                    : 38...42
Overflow valve
                                                          SLEEVE POSITION
                     : 1 417 413 025
                                                          Control-lever position
                                                                        Degree: -1
                                                                         17min: 550
Inlet press., bar : 1.50
                                                          Cont.-rod travelmm: 15.60...16.40
Calibrating nozzle-holder
                                                          FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 1 688 901 019
 assembly
Opening
                                                          1st version
                                                          Speed 1/min: 850
Charge press. hPa: 700
 pressure, bar
                   : 207...210
                                                         Del.quantity cm3/: 211.0...213.0
1000H.: (208.0...216.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
Perforated-plate
 diameter mm
                     : 0,8
Test inj. tubing : 1 680 750 067
                                                          HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                          Setting point:
                     : 6.00x1.50x1000
x Length mm
                                                          Speed
                                                                     1/min : 550
                                                          Contra-rod trav.mm: 16.0
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                          Testing:
                                                          1st c-rod trav.mm : 12.90
                                                         Speed 1/min: 1035...1050
2nd c-rod trav.mm: 4.00
    per values
START OF DELIVERY
                                                           Speed
                                                                      1/min : 1085...1115
                                                          4th speed
Test pressure, bar: 25...27
                                                                      1/min : 1250
                                                            C-rod trav.mm : 0.00...1.00
MO8
```

```
LOWEST RATED SPEED I
Control-lever
position degrees: 9...17
Setting point w/out aux. spring
        1/min : 250
Speed
Contr.-rod trav.mm: 6.8
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 8.30
            1/min : 250
Speed
                 : 6.70...6.90
C-rod trav.mm
C-rod trav.mm
            mm : 2.00
1/min : 330...370
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 850
  C-rod trav.mm : 14.10...14.20
2nd speed 1/min : 1000
  C-rod trav.mm : 14.00...14.20
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 600
Speed
Pressure
            hPa : 700
Contr.-rod trav.mm: 13.90...14.00
Measurement
Speed
             1/min: 600
1st pressure hPa : -
                   : 11.40...11.60
 C-rod trav.mm
2nd pressure hPa : 440
C-rod trav.mm : 13.30...13.40
3rd pressure hPa : 330
  C-rod trav.mm : 11.80...12.20
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed
            1/min : 600
Del.quantity cm3/: 141.0...143.0
1000H.: (138.0...146.0)
Remarks:
See VDT-I-420/115
```

Prestroke mm : 2.80...2.90 : (2.75...2.95) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition : DAF 11,7 C : 12.09.86 Superceeded SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 520 BASIC SETTING Injection pump Pump designation : PE6P120A320R\$506 1st speed 1/mi: 600 EP type number : 0 411 826 141 Contr.-rod trav.mm: 12.80...12.90 Governor Governor design. : RQ250/1000PA765 Del.quantity cm3/: 18.7...18.9 Governer no. : 0 421 801 313 Customer-spec. information 100H.: (18.4...19.2) Customer : DAF cm3/:0.5Dispersion Engine : DWT 210 190H.: (0.9) 1st version kW : 210.0 2nd speed 1/min: 250.0 Contr.-rod trav. m: 7.4...7.6 Del.quantity cm3/: 1.6...2.2 Speed 1/min: 2000 TEST BENCH REQUIREMENTS 100H.: (1.3...2.5) cm3/: 0.8 100H.: (1.2) Calibrating-oil inlet temp. °C Dispersion : 38...42 Overflow valve SLEEVE POSITION : 1 417 413 025 Control-lever position Degree: -1 1/min: 550 Inlet press., bar: 1.50 Cont.-rod travelmm: 15.60...16.40 Calibrating nozzle-holder : 1 688 901 019 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version Speed 1/min: 600 Charge press. hPa: 700 Del.quantity cm3/: 187.0...189.0 1000H.: (184.0...192.0) Dispersion cm3/: 5.00 1000H.: (9.00) pressure, bar : 207...210 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 HIGHEST RATED SPEED Outside diameter x Wall thickness Setting point: x Length mm : 6.00x1.50x1000 1/min : 550 Contr.-rod trav.mm: 16.0 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.90 per values Speed 1/min: 1035...1050 2nd c-rod trav.mm: 4.00 Speed 1/min: 1105...1135 th speed 1/min: 1250 START OF DELIVERY Test pressure, bar: 25...27 4th speed C-rod trav.mm : 0.00...1.00

M10

LOWEST RATED SPEED I Control-lever position degrees: 9...17 Setting point w/out aux. spring Speed 1/min : 250 Contr.-rod trav.mm: 6.8 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.00 1/min : 250 Speed C-rod trav.mm : 6.70...6.90 mm : 2.00 1/min : 330...370 C-rod trav.mm Speed TORQUE CONTROL Dimension a mm : 0.55 Torque-control curve - 1st version 1st speed 1/min: 600 C-rod trav.mm : 13.00...13.10 2nd speed 1/min: 990 C-rod trav.mm : 11.90...12.10 3rd speed 1/min : 800 C-rod trav.mm : 12.50...12.80 4th speed 1/min: 900 C-rod trav.mm : 11.90...12.20 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 600 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.80...12.90 Measurement 1/min: 600 Speed 1st pressure hPa : -: 11.20...11.40 C-rod tray.mm 2nd pressure hPa : 300 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 260 : 11.70...11.90 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min : 990 Speed Del.quantity cm3/: 178.0...182.0 1000H.: (175.0...185.0) Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 141.0...143.0 1000H.: (138.0...146.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6 Y4 : 12.09.86 Edition

Superceeded

: ISO-4113

Calibrating oil

Combination no.

: 0 401 846 521

Injection pump

: PE6P120A320RS415-1 Pump designation

EP type number : 0 411 826 123

Governor

Governor design. : RQ250/1100PA417-5

Governer no. : 0 421 801 317

Customer-spec. information Customer : DAF

: DKV 1160 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

£ 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 2.80...2.90 Prestroke mm

: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

```
Cam sequence : 1-5-3-6-2-4
                                                          position degrees: 9...17
                                                         Setting point w/out aux. spring
                                                                     1/min : 250
                                                         Speed
                                                         Contra-rod trav.mm: 6.3
SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
                                                         Testing:
                                                         Speed 1/min: 100
C-rod trav.mm min: 7.20
BASIC SETTING
                                                                      1/min : 250
                                                         Speed
                                                         C'-rod trav.mm : 6.20...6.40
C-rod trav.mm : 2.00
            1/mi: 650
1st speed
Contr.-rod trav.mm: 11.00...11.10
                                                         Speed
                                                                      1/min : 440...480
Del.quantity cm3/: 16.7...16.9
                                                         TORQUE CONTROL
                                                         Dimension a mm : 0.77
               100H.: (16.4...17.2)
                                                         Torque-control curve - 1st version
                                                         1st speed 1/min: 650
Dispersion
               cm3/:0.5
                                                           C-rod trav.mm : 11.20...11.30
                                                         2nd speed 1/min : 1090
               100H.: (0.9)
                                                           C-rod trav.mm : 9.60...9.80
                                                         3rd speed 1/min : 825
                                                           C-rod trav.mm : 10.70...10.90
2nd speed
               1/min: 250.0
Contr.-rod trav. m: 6.5...6.7
Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
                                                         4th speed 1/min: 975
                                                           C-rod trav.mm : 9.90...10.20
               cm3/: 0.8
100H.: (1.2)
Dispersion
                                                          compensator (LDA,ADA,ALDA)
SLEEVE POSITION
                                                         1st version
Control-lever position
                                                         Setting
              Degree: -1
1/min: 700
                                                                       1/min : 600
                                                         Speed
                                                        Pressure hPa : 700
Speed
Cont.-rod travelmm: 15.60...16.40
                                                         Contr.-rod tray.mm: 11.00...11.10
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                         Measurement
                                                         Speed
                                                                      1/min : 600
1st version
Speed 1/min: 650
Charge press. hPa: 700
Det.quantity cm3/: 167.0...169.0
1000H.: (164.0...172.0)
                                                         1st pressure hPa : -
                                                           C-rod trav.mm : 9.80...10.00
                                                         2nd pressure hPa : 290
                                                           C-rod trav.mm : 10.70...10.90
             cm3/ : 5.00
Dispersion
                                                         3rd pressure hPa : 260
              1000H.: (9.00)
                                                                              : 10.20...10.50
                                                           C-rod trav.mm
HIGHEST RATED SPEED
                                                         FUEL-DELIVERY CHARACTERISTICS
Setting point:
                                                         1st version
            1/min : 700
                                                         Charge press. hPa: 700
                                                                      1/min : 1090
Contr.-rod trav.mm: 16.0
                                                         Del.quantity cm3/: 147.0...151.0
1000H.: (144.0...154.0)
Testing:
1st c-rod trav.mm: 8.60
                                                         Charge press. hPa : -
Speed 1/min: 1130...1145
2nd c-rod trav.mm: 4.00
Speed 1/min: 1180...1210
4th speed 1/min: 1300
                                                        Speed 1/min: 600
Del.quantity cm3/: 135.0...137.0
1000H.: (132.0...140.0)
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
                                                        Remarks:
```

M13

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : RVI 11,9 A : 07.11.86 Calibrating oil : ISO-4113 Combination no. : 0 401 846 522 Injection pump Pump designation : PE6P110A720RS380 EP type number : 0 411 816 126 Governor Governor design. : RQV250...1050PA434-3 Governer no. : 0 421 813 510 Customer-spec. information Customer : RVI Engine : BSR 36 D TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27 : 2.80...2.90 : (2.75...2.95) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 5- 3- 6- 2-

SD ang. spacing  $^{\circ}$  CS: 0-60-120-180-240-300 Tolerance + -  $^{\circ}$  : 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1/mi: 1050 1st speed Contr.-rod trav.mm: 15.60...15.70 Del.quantity cm3/: 19.4...19.7 100H.: (19.1...19.9) Dispersion cm3/:0.4100H.: (0.7) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 7.8...8.0 Del.quantity cm3/: 1.4...1.9 100H.: (1.1...2.1) cm3/: 0.4 100H.: (0.7) Dispersion (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS 1st speed 1/min: 300
Sleeve travel mm: 1.70...2.00
2nd speed 1/min: 850 Sleeve travel mm: 6.10...6.30 3rd speed 1/min: 1050 Sleeve travel mm: 7.90...8.10 SLEEVE POSITION Control-lever position Degree: -1 Speed 17min: 1100 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1050 Charge press. hPa: 700 Del.quantity cm3/: 194.0...197.0 1000H.: (191.5...199.5) Dispersion cm3/: 4.00 1000H.: (7.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 62...70 Testing:

M16

1st c-rod trav.mm : 14.60 Speed 1/min: 1090...1100 2nd c-rod trav.mm: 4.00 1/min: 1240...1270 4th speed 1/min: 1350 C-rod tray.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 11...19 Testing: 1/min : 100 Speed C-rod trav.mm min: 9.40 Speed 1/min: 250 C-rod trav.mm: 7.80...8.00 CONSTANT REGULATION 1/min : 345...465 Speed compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 500 Pressure hPa : 700 Contr.-rod trav.mm: 15.60...15.70 Measurement Speed 1/min : 500 1st pressure hPa : -C-rod trav.mm : 13.20...13.30 2nd pressure hPa : 360 C-rod trav.mm : 15.10...15.20 3rd pressure hPa : 280 C-rod trav.mm : 13.90...14.20 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed

1/min : 500

Del.quantity cm3/: 144.0...147.0 1000H.: (141.5...149.5)

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                   : VOL 7,1 B 3
                   : 12.09.86
Superceeded : 7.86
Calibrating oil : ISO-4113
                                                        SD mark cyl. no. : 1
Combination no. : 0 401 846 524
                                                        BASIC SETTING
Injection pump
                                                                        1/mi: 700
                                                        1st speed
Pump designation : PE6P110A320RS494-1
EP type number
                  : 0 411 816 168
                                                        Contr.-rod trav.mm: 11.90...12.00
Governor
Governor design.: RQV300...1200PA435-4
                                                        Del.quantity cm3/ : 12.1...12.3
Governer no. : 0 421 813 527
                                                                       100H.: (11.8...12.6)
Customer-spec. information
Customer
                    : VOLVO-BM
                                                        Dispersion
                                                                       cm3/:0.4
Engine
                    : TD 71K
                                                                       100H.: (0.7)
1st version kW : 177.0
                                                                      1/min: 300.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 4.8...5.0
              1/min: 2400
Speed
                                                       Del.quantity cm3/: 1.7...2.1
Dispersion cm3/: 0.3
100H.: (0.6)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
                                                        SLEEVE POSITION
                                                        Control-lever position
Overflow valve
                                                                     Degree: -1
1/min: 1200
                     : 1 417 413 025
                                                        Cont.-rod travelmm: 15.20...17.80
Inlet press., bar: 1.50
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                  : 0 681 343 009
                                                        1st version
 assembly
                                                       Speed 1/min: 700
Charge press. hPa: 1000
Del.quantity cm3/: 121.0...123.0
1000H.: (118.0...126.0)
Dispersion cm3/: 4.00
Opening
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
                                                                     1000H.: (7.50)
                                                       HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                       1st version
x Length mm : 6.00x1.50x600
                                                       Control-lever
                                                        position degrees: 60...68
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Testing:
                                                       1st c-rod trav.mm : 10.90
    per values ____
                                                          Speed 1/min: 1240...1250
                                                       2nd c-rod trav.mm : 4.00
Speed 1/min : 1320...1350
4th speed 1/min : 1450
START OF DELIVERY
Test pressure, bar: 25...27
                                                         C-rod trav.mm : 0.00...1.00
                    : 3.00...3.10
Prestroke mm
                    : (2.95...3.15)
                                                       LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                       Control-lever
M18
```

position degrees: 7...15 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.30 Speed 1/min : 300 : 4.80...5.00 C-rod trav.mm CONSTANT REGULATION 1/min : 350...510 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 1000 Speed Pressure Contr.-rod trav.mm: 11.90...12.00 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 9.60...9.70
2nd pressure hPa : 510
C-rod trav.mm : 11.70...11.80
3rd pressure hPa : 220
C-rod trav.mm C-rod trav.mm : 9.80...10.00 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 1000 1/min : 1000 **beea**2 Del.quantity cm3/: 120.5...123.5 1000H.: (117.0...127.0) Charge press. hPa: Speed 1/min: 700 Del.quantity cm3/: 79.0...81.0 1000H.: (76.0...84.0) Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence : 1-5- 3-6-2-4
Note inst. in remarks column
Test sheet
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                   : DAF 11,6 X1
Edition
                   : 12.09.86
Superceeded
Calibrating oil
                 : ISO-4113
                                                    BASIC SETTING
Combination no.
                  : 0 401 846 530
                                                                 1/mi: 600
                                                    1st speed
Injection pump
                                                    Contra-rod trav.mm: 12.00...12.10
Pump designation : PE6P110A320RS407-1
EP type number : 0 411 816 147
                                                    Del.quantity cm3/: 13.3...13.6
Governor
Governor design. : RQ275/1000PA818
                                                                  100H.: (13.1...13.9)
Governer no.
                  : 0 421 801 360
                                                    Dispersion
                                                                  cm3/:0.4
Customer-spec. information
                   : DAF
Customer
                                                                  100H.: (0.7)
                                                    2nd speed 1/min: 275.0
Contr.-rod trav. m: 7.2...7.4
                   : LT 160
Engine
1st version kW : 160.0
                                                    Del.quantity cm3/: 1.4...1.9
Speed
             1/min: 2000
                                                                  100H.: (1.1...2.1)
                                                                  cm3/: 0.4
100H.: (0.7)
                                                    Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                    SLEEVE POSITION
                  : 38...42
                                                    Control-lever position
                                                                Degree: -1
1/min: 600
Overflow valve
                                                    Speed
                   : 1 417 413 025
                                                    Cont.-rod travelmm: 15.60...16.40
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                    1st version
                : 0 681 343 009
 assembly
                                                                  1/min: 600
                                                    Speed
                                                    Del.quantity cm3/: 133.5...136.5
1000H.: (131.0...139.0)
Dispersion cm3/: 4.00
Chinad
pressure, bar : 172...175
                                                                 1000Ha: (7.50)
Test inj. tubing : 1 680 750 015
                                                    HIGHEST RATED SPEED
Outside diameter
                                                    Setting point:
x Wall thickness
                                                    Speed 1/min: 600
                : 6.00x1.50x600
                                                    Contr.-rod trav.mm: 16.0
x Length mm
(A) Injection pump setting values
                                                    Testing:
    Insp. values in parentheses
Set constant delivery quant.
                                                    1st c-rod trav.mm: 9.90
                                                                1/min : 1030...1045
                                                      Speed
    per values ____
                                                    2nd c-rod trav. mm : 4.00
                                                                1/min : 1090...1120
                                                      Speed
                                                    4th speed 1/min: 1300
START OF DELIVERY
                                                      C-rod trav.mm : 0.00...1.00
Test pressure, bar: 25...27
Prestroke mm
                   : 2.80...2.90
                                                    LOWEST RATED SPEED I
                   : (2.75...2.95)
                                                    Setting point w/out aux. spring
Contr.-rod trav.mm: 9.00...12.00
                                                               1/min : 275
                                                    Speed
M20
```

Remarks: See VDT-I-420/115

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75)
                     : VAL 7,2 B
Edition
                     : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                         SD mark cyl. no. : 1
Combination no.
                    : 0 401 846 532
                                                         BASIC SETTING
Injection pump
                                                                         1/mi: 700
                                                         1st speed
Pump designation : PE6P110A320R8856
EP type number : 0 411 816 170
                                                         Contr.-rod trav.mm: 12.00...12.10
Governor
Gevernor design. : RQV250...1150PA825
Governer no. : 0 421 813 570
                                                         Del.quantity cm3/: 13.9...14.1
                                                                        100H.: (13.6...14.4)
Customer-spec. information
Customer
                     : VALMET
                                                                        cm3/:0.4
                                                         Dispersion
                     : 612 DSJ
Engine
                                                                        100H.: (0.7)
                                                         2nd speed 1/min: 325.0
Contr.-rod trav. m: 7.5...7.7
1st version kW : 165.0
               1/min: 2300
Speed
                                                         Del.quantity cm3/: 2.2...2.6
                                                                        100H.: (1.9...2.8) cm3/: 0.3
TEST BENCH REQUIREMENTS
                                                         Dispersion
Calibrating-oil inlet temp. OC
                                                                        100H.: (0.6)
                    : 38...42
                                                         (B) Setting of injection pump with
Overflow valve
                                                              externally-mounted governor
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
                                                         1st speed 1/min: 325
Sleeve travel mm: 2.00...2.10
Inlet press., bar : 1.50
                                                         2nd speed 1/min: 380
Calibrating nozzle-holder
                    : 0 681 343 009
                                                           Sleeve travel mm: 2.30...2.70
 assembly
                                                         3rd speed 1/min: 470
                                                         Sleeve travel mm: 2.90...3.40
4th speed 1/min: 1200
Sleeve travel mm: 8.10...8.20
5th speed 1/min: 1310
Sleeve travel mm: 9.10...9.40
Opening
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
Outside diameter
                                                         SLEEVE POSITION
x Wall thickness
                                                         Control-lever position
                                                                       Degree: -1
x Length mm
                     : 6.00x1.50x600
                                                                        17min: 1240
                                                         Speed
                                                         Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                         1st version
START OF DELIVERY
                                                                        1/min: 700
                                                         Speed
                                                         Charge press. hPa : 700
Del.quantity cm3/ : 139.0...141.0
Test pressure, bar: 25...27
                                                                      1000H.: (136.0...144.0) cm3/ : 4.00
Prestroke mm
                     : 3.00...3.10
                     : (2.95...3.15)
                                                         Dispersion
Contr.-rod trav.mm: 9.00...12.00
                                                                       1000H.: (7.50)
M22
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 42...50 Testing: 1st c-rod trav.mm : 11.00 1/min: 1190...1200 Speed 2nd c-rod trav.mm: 4.00 Speed 1/min: 1290...1320 4th speed 1/min: 1450 C-rod trav.mm: 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Testing: 1/min: 100 Speed Speed 1/min: 9.00
C-rod trav.mm min: 9.00
Speed 1/min: 325
C-rod trav.mm : 7.50...7.70 CONSTANT REGULATION 1/min: 325...500 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.00...12.10 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.40...10.50 2nd pressure hPa : 415 C-rod trav.mm : 11.60...11.70 3rd pressure hPa : 270 C-rod trav.mm : 10.70...10.90 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed 1/min: 700 Del.quantity cm3/: 102.5...105.5 1000H.: (100.0...108.0)

Tractor (tractor engines)

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Remarks: APPLICATION

BOSCH INJ. PUMP TEST SPECIFICATIONS : 2.80...2.90 : (2.75...2.95) Prestroke mm Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-Test sheet Edition : DAF 11,6014 : 28.10.86 Superceeded SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 533 BASIC SETTING Injection pump Pump designation : PE6P12OA32ORS372-1Y 1st speed 1/mi: 850 EP type number : 0 411 826 125 Governor Contr.-rod trav.mm: 11.40...11.50 Governor design. : RQ250/1100PA417-6 Governer no. : 0 421 801 367 Del.quantity cm3/: 18.3...18.5 100H.: (18.0...18.8) Customer-spec. information Customer : DAF cm3/:0.5Dispersion Engine : DKX 1160 100H.: (0.9) 1st version kW : 242.7 1/min: 2200 Speed 1/min: 250.0 2nd speed Contr.-rod trav. m: 6.5...6.7 Del.quantity cm3/: 1.4...2.0 100H:: (1.1...2.3) Dispersion cm3/: 0.8 100H:: (1.2) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve SLEEVE POSITION : 1 417 413 025 Control-lever position Degree: -1 17min: 700 Inlet press., bar : 1.50 Cont.-rod travelmm: 15.60...16.40 Calibrating nozzle-holder FULL-LOAD DELIV. AT FULL-LOAD STOP : 1 688 901 019 assembly Opening 1st version pressure, bar : 207...210 1/min: 850 Speed Charge press. hPa: 700 Del.quantity cm3/: 183.5...185.5 1000H.: (180.5...188.5) Dispersion cm3/: 5.00 1000H.: (9.00) Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 HIGHEST RATED SPEED Outside diameter x Wall thickness Setting point: : 6.00x1.50x1000 x Length mm Speed 1/min: 700 Contr.-rod trav.mm: 16.0 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.40 Speed 1/min : 1135...1150 per values \_\_\_\_ 2nd c-rod trav.mm : 4.00 START OF DELIVERY 1/min : 1200...1230 Speed 4th speed 1/min: 1350 Test pressure, bar: 25...27 C-rod trav.mm : 0.00...1.00 M24

```
LOWEST RATED SPEED I
Setting point w/out aux. spring
            1/min : 250
Contr.-rod trav.mm: 6.6
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.40
            1/min : 250
Speed
C-rod trav.mm : 6.50...6.70
C-rod trav.mm : 2.00
            1/min : 455...495
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 850
C-rod trav.mm : 11.40...11.50
2nd speed 1/min : 1100
  C-rod trav.mm : 11.30...11.50
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min: 600
Speed
          hPa : 700
Pressure
Contr.-rod trav.mm: 11.40...11.50
Measurement
             1/min : 600
Speed
1st pressure hPa : -
 C-rod trav.mm : 10.00...10.10
2nd pressure hPa : 370
 C-rod trav.mm : 11.00...11.10
3rd pressure hPa : 330
  C-rod trav.mm : 10.40...10.80
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed
            1/min : 600
Del.quantity cm3/: 135.5...137.5
1000H.: (132.5...140.5)
```

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5- 3- 6- 2- 4
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : DAF 8,3 015
Edition
                    : 12.09.86
Superceeded
Calibrating oil
                   : ISO-4113
                                                      BASIC SETTING
Combination no.
                   : 0 401 846 535
                                                                     1/mi: 1000
                                                      1st speed
                                                      Contr.-rod trav.mm: 11.40...11.50
Injection pump
Pump designation : PE6P100A720RS447
EP type number
                    : 0 411 806 191
                                                      Del.quantity cm3/: 11.8...12.0
Governor
Governor design. : R9225 \( \text{-00PA617-2} \)
Governor no. : 0 42\( \text{-301} \) 370
                                                                    100H.: (11.6...12.2)
                                                      Dispersion
                                                                    cm3/:0.3
Gustomer-spec. information
Customer
                   : DAF
                                                                    100H.: (0.6)
Engine
                   : DHT 825
                                                      2nd speed
                                                                    1/min: 225.0
                                                      Contr.-rod trav. m: 5.3...5.5
                                                      Del.quantity cm3/: 1.0...1.4
100H:: (0.7...1.6)
Dispersion cm3/: 0.3
100H:: (0.5)
1st version kW : 162.0
Speed
              1/min: 2400
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                   Degree: -1
Overflow valve
                                                                    17min: 650
                                                      Speed
                    : 1 417 413 025
                                                      Cont.-rod travelmm: 15.60...16.40
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                      1st version
                                                     Speed 1/min: 1000
Charge press. hPa: 700
Del.quantity cm3/: 118.5...120.5
1000H:: (116.5...122.5)
                 : 0 681 343 009
 assembly
Opening
 pressure . bar : 172...175
                                                                   cm3/ : 3.50
                                                      Dispersion
                                                                   1000H.: (6.00)
Test inj. tubing : 1 680 750 015
                                                     HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                      Setting point:
x Length mm
                : 6.00x1.50x600
                                                               1/min : 650
                                                     Contr.-rod trav.mm: 16.0
(A) Injection pump setting values
    Insp. values in parentheses
                                                     Testing:
    Set constant delivery quant.
                                                      1st c-rod trav.mm : 10.40
    per values
                                                        Speed 1/min: 1235...1250
                                                      2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                                 1/min : 1305...1335
                                                       Speed
                                                      4th speed 1/min: 1450
Test pressure, bar: 25...27
                                                       C-rod trav.mm : 0.00...1.00
                    : 3.20...3.30
Prestroke mm
                    : (3.15...3.35)
                                                     LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                     Setting point w/out aux. spring
M26
```

Speed 1/min : 225 Contr.-rod trav.mm: 5.4 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.00 1/min : 225 Speed C-rod trav.mm : 5.30...5.50 C-rod trav.mm : 2.00 Speed 1/min : 365...405 TORQUE CONTROL Torque-control curve - 1st version 1/min : 1000 1st speed C-rod trav.mm : 11.40...11.50 2nd speed 1/min : 1200 C-rod trav.mm : 11.30...11.50 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 600 Speed hPa : 700 Pressure Contr.-rod trav.mm: 11.40...11.50 Measurement 1/min: 600 Speed 1st pressure hPa : -C-rod trav.mm : 10.40...10.50 2nd pressure hPa : 315 C-rod trav.mm : 11.10...11.20 3rd pressure hPa : 270 C-rod trav.mm : 10.50...10.90 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed 1/min : 600 Del.quantity cm3/: 92.5...96.5 1000H.: (90.5...98.5) Remarks: See VDT-I-420/115

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Note inst, in remarks column Cam sequence : 6- 3- 5- 2- 4- 1 Test sheet Edition Superceeded : MB 11\_D C 1 : 22.10.86 Superceeded : 10.85 Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) Combination no. : 0 401 846 749 SD mark cyl. no. : 6 Injection pump Pump designation : PE6P110A320LS3805 BASIC SETTING EP type number : 0 411 816 718 1st speed 1/mi: 1150 Governor Governor design. : RQ300/1150PA187-6 Governer no. : 0 421 801 155 Contr.-rod trav.mm: 11.70...11.80 Customer-spec. information Del.quantity cm3/: 13.3...13.5 Customer : DB 100H.: (13.0...13.7) Engine : 0M421 cm3/:0.4Dispersion 1st version kW : 159.0 1/min: 2300 Speed 100H.: (0.8) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...8.0 Del.quantity cm3/: 1.2...1.8 100H.: (0.9...2.0) Dispersion cm3/: 0.4 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve 100H.: (0.7) : 1 417 413 025 SLEEVE POSITION Control-lever position Inlet press., bar: 1.50 Degree: -1 1/min: 650 Overflow Cont.-rod travelmm: 13.20...14.00 quantity min. 1/h: 100...120 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version Opening Speed 1/min: 1150 Del.quantity cm3/: 133.0...135.0 1000H.: (130.5...137.5) Dispersion cm3/: 4.00 1000H.: (8.00) pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter HIGHEST RATED SPEED x Wall thickness : 6.00x1.50x600 x Length mm Setting point: Speed 1/min : 650 (A) Injection pump setting values Contr.-rod trav.mm: 13.6 Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 10.70 Speed 1/min : 1195...1210 2nd c-rod trav.mm : 4.00 per values \_\_\_\_ START OF DELIVERY Speed 1/min: 1240...1270 Test pressure, bar: 25...27 4th speed 1/min: 1350 M28

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Setting point W/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 7.9

Testing:

1/min : 100 Speed C-rod trav.mm min: 9.50

Speed 1/min: 300

C-rod trav.mm : 7.80...8.00

C-rod trav.mm : 2.00

1/min : 410...440 Speed

FUEL-DELIVERY CHARACTERISTICS

1/min : 600 Speed

Del.quantity cm3/: 112.0...116.0 1000H.: (109.0...119.0) Dispersion cm3/: 6.00 1000H.: (9.00)

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : PEN 12,1 A
                   : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                    SD mark cyl. no. : 1
Combination no. : 0 401 846 811
                                                    BASIC SETTING
Injection pump
                                                                  1/mi: 700
                                                    1st speed
Pump designation : PE6P12OA32ORS3148
EP type number : 0 411 826 746
                                                    Contr.-rod trav.mm: 12.00...12.10
Governor
                                                    Del.quantity cm3/: 24.6...24.9
Governor design. : RQ750PA783
Governer no. : 0 421 801 334
                                                                 100H.: (24.4...25.2)
Customer-spec. information
Customer
                  : VOLVO-PENTA
                                                                 cm3/:0.5
                                                    Dispersion
Engine
                   : TJD121KG
                                                                  100H.: (0.9)
1st version kW : 246.0
                                                    2nd speed
                                                                 1/min: 300.0
                                                    Contr.-rod trav. m: 4.8...5.0
Speed
             1/min: 1500
                                                    Del.quantity cm3/: 1.5...2.0
Dispersion cm3/: 0.4
TEST BENCH REQUIREMENTS
                                                                 100H.: (0.7)
Calibrating-oil inlet temp. <sup>D</sup>C
                   : 38...42
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Overflow valve
                                                    1st version
                   : 1 417 413 025
                                                                 1/min: 700
                                                    Speed
                                                    Del.quantity cm3/: 246.5...249.5
                                                                1000H.: (244.0...252.0)
Inlet press., bar: 1.50
                                                                cm3/ : 5.00
                                                    Dispersion
Calibrating nozzle-holder
                                                                1000H.: (9.00)
 assembly
                 : 1 688 901 019
                                                    HIGHEST RATED SPEED
Opening
                                                    1st version
pressure, bar : 207...210
                                                    Control-lever
                                                     position degrees: 21...29
Test inj. tubing : 1 680 750 015
                                                    Testing:
                                                    1st c-rod trav.mm : 11.00
                                                      Speed 1/min: 750...755
Outside diameter
                                                   2nd c-rod trav.mm : 4.00
Speed 1/min : 776...789
x Wall thickness
x Length mm
             : 6.00x1.50x1000
                                                                1/min: 850
                                                    4th speed
                                                      C-rod trav.mm : 0.00...1.00
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values ____
START OF DELIVERY
                                                   Remarks:
Test pressure, bar: 25...27
                   : 2.60...2.70
Prestroke mm
                   : (2.55...2.75)
Contr.-rod trav.mm: 9.00...12.00
```

NO2

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : MB 11,0 Q 5 Edition : 12.09.86 Superceeded : 12.85 Calibrating oil : ISO-4113 Combination no. : 0 401 846 812 Injection pump Pump designation : PE6P120A320LS3815-10 EP type number : 0 411 826 735 Governor Governor design. : RQ300/1150PA511-4 Governer no. : 0 421 801 341 Customer-spec. information Customer : DAIMLER-BENZ Engine : 0M421A 1st version kW : 184.0 1/min: 2300 Speed TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overficw. quantity min. 1/h: 100...110 Calibrating nozzle-holder assembly : 1 688 901 019 Opening | pressure, bar : 207...210 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

```
Speed 1/min: 1195...1210
2nd c-rod trav.mm: 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                                        1/min : 1250...1280
1/min : 1360
                                                            Speed
Prestroke mm
                      : 4.00...4.10
                                                          4th speed
                      : (3.95...4.15)
                                                            C-rod tray.mm : 0.00...1.00
Contr.-rod trav.mm: 9.00...12.00
Cam seguence : 6- 3- 5- 2- 4- 1
                                                          LOWEST RATED SPEED I
                                                          Setting point w/out aux. spring
                                                          Speed 1/min: 300 Contr.-rod trav.mm: 5.0
SD ang. spacing ^{0}CS: 0-45-120-165-240-285
Tolerance +-^{0}: 0.50 (0.75)
                                                          Testing:
                                                          Speed
                                                                        1/min : 100
                                                          C-rod trav.mm min: 6.70
Speed 1/min: 300
SD mark cyl. no. : 6
                                                          C-rod trav.mm : 4.90...5.10
C-rod trav.mm : 2.00
BASIC SETTING
                                                                       1/min : 360...390
                1/mi: 1150
1st speed
                                                          Speed
Contr.-rod trav.mm: 10.40...10.50
                                                           compensator (LDA,ADA,ALDA)
Del.quantity cm3/: 15.8...16.0
                                                          1st version
                100H.: (15.5...16.3)
                                                          Setting
                                                                        1/min : 500
                                                          Speed
Dispersion
                                                          Pressure
               cm3/:0.5
                                                                        hPa
                                                          Contr.-rod trav.mm: 10.00...10.20
                100H.: (0.9)
                                                          Measurement
2nd speed 1/min: 300.0
Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/: 1.4...2.0
                                                          Speed
                                                                        1/min : 500
                                                          1st pressure hPa : 340
               100H.: (1.1...2.3)
cm3/: 0.8
                                                            C-rod trav.mm : 10.20...10.30
Dispersion
                100H.: (1.2)
                                                          SWITCH-OVER POINT
                                                          Speed 1/min : 220 (240)
SLEEVE POSITION
Control-lever position
                                                          FUEL-DELIVERY CHARACTERISTICS
              Degree: -2
               17min: 600
Speed
                                                          1st version
Cont.-rod travelmm: 19.10...20.80
                                                          Charge press. hPa: 700
                                                                        1/min: 600
                                                          Speed
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                          Del.quantity cm3/: 157.0...163.0
1000H.: (154.0...166.0)
                                                                         cm3/ : 8.00
1st version
                                                          Dispersion
Speed 1/min: 1150
Charge press. hPa: 700
Del.quantity cm3/: 158.0...160.0
1000H.: (155.0...163.0)
                                                                        1000H.: (12.00
                                                          Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 139.0...142.0
Dispersion cm3/ : 5.00
                                                                        1000H.: (136.0...145.0)
                                                                       cm3/: 8.00
              1000H.: (9.00)
                                                          Dispersion
                                                                        1000%.: (12.0)
HIGHEST RATED SPEED
Setting point:
Speed 1/min: 600
Contr.-rod trav.mm: 19.9
                                                          Remarks:
Testing:
1st c-rod trav.mm : 9.40
```

**NO4** 

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 Prestroke mm Test sheet : MB 11,0 E 4 : (3.95...4.15) : 12.09.86 Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6- 3- 5- 2- 4- 1 Edition Superceeded : ISO-4113 Calibrating oil Combination no. : 0 401 846 819 SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) Injection pump Pump designation : PE6P120A320LS3810-10 EP type number : 0 411 826 734 SD mark cyl. no. : 6 Governor Governor design. : RQV350...1150PA553-1 Governer no. : 0 421 813 540 BASIC SETTING 1st speed 1/mi: 1130 Customer-spec. information Customer Contr.-rod trav.mm: 11.20...11.30 : 0M421A Del.quantity cm3/: 16.7...16.9 Engine 1st version kW : 198.0 100H.: (16.4...17.2) Speed 1/min: 2300 cm3/:0.5Dispersion TEST BENCH REQUIREMENTS 100H.: (0.9) Calibrating-oil inlet temp. C : 38...42 1/min: 350.0 2nd speed Contr.-rod trav. m: 4.9...5.1 Del.quantity cm3/: 1.6...2.2 Overflow valve : 1 417 413 025 100H.: (1.3...2.5) cm3/: 0.8 Dispersion 100H.: (1.2) Inlet press., bar: 1.50 SLEEVE POSITION Over flow quantity min. 1/h: 100...120 Control-lever position Degree: -1 1/min: 1180 Calibrating nozzle-holder Speed : 1 688 901 019 Cont.-rod travelmm: 15.20...17.80 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening. : 207...210 pressure, bar 1st version Speed 1/min: 1130
Del.quantity cm3/: 167.0...169.0
1000H.: (164.0...172.0)
Dispersion cm3/: 5.00 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 1000H.: (9.00) Outside diameter HIGHEST RATED SPEED x Wall thickness 1st version x Length mm : 6.00x1.50x1000 Control-lever position degrees: 60...68 (A) Injection pump setting values Insp. values in parentheses Testing: Set constant delivery quant. 1st c-rod trav.mm: 10.20 per values \_\_\_\_ Speed 1/min: 1170...1180 2nd c-rod trav.mm: 4.00

Speed 1/min: 1245...1275 4th speed 1/min: 1400

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I Control-lever

position degrees: 8...16

Testing:

Speed 1/min: 100 C-rod trav.mm min: 6.50 Speed 1/min: 350 C-rod trav.mm : 4.90...5.10

CONSTANT REGULATION

1/min : 385...505 Speed

SWITCH-OVER POINT

Speed 1/min: 270 (290)

Remarks: **APPLICATION** 

Pistenbully

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                            : 4.00...4.10
                                                       Prestroke mm
                                                                            : (3.95...4.15)
                                                       Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                                           : 6-3-5-2-4-1
                                                       Cam sequence
Test sheet
                   : MB 11,0 M 1
Edition
                    : 12.09.86
Superceeded
                                                       SD ang. spacing<sup>0</sup>CS: 0-45-120-165-240-285
Tolerance + - 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 846 820
                                                       SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3814-10
                                                       BASIC SETTING
EP type number
                   : 0 411 816 741
Governor
                                                                       1/mi: 1150
                                                       1st speed
Governor design. : RQV375...1150PA809R
Governer no.
                   : 0 421 813 542
                                                       Contr.-rod trav.mm: 12.70...12.80
                                                       Del.quantity cm3/ : 13.4...13.6
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                      100H.: (13.1...13.8)
Engine
                    : 0M421
                                                                      cm3/:0.4
                                                       Dispersion
1st version kW : 159.0
Speed
              1/min: 2300
                                                                      100H.; (0.8)
                                                       2nd speed 1/min: 375.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/: 1.3...1.9

100H.: (1.0...2.1)

Dispersion cm3/: 0.4

100H.: (0.7)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                       SLEEVE POSITION
                                                       Control-lever position
Inlet press., bar: 1.50
                                                                    Degree: -1
                                                       Speed 17min: 1150
Cont.-rod travelmm: 15.20...17.80
Overflow
 quantity min. 1/h: 100. 120
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                       1st version
                                                                      1/min: 1150
Opening
                                                       Speed
                                                       Del.quantity cm3/: 134.0...136.0
pressure, bar
                   : 172...175
                                                                    1000H.: (131.5...138.5)
cm3/ : 4.00
1000H.: (8.00)
                                                       Dispersion
Test inj. tubing : 1 680 750 015
                                                       HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                       1st version
                    : 6.00x1.50x600
x Length mm
                                                       Control-lever
                                                        position degrees: 62...70
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Testing:
                                                       1st c-rod trav.mm : 11.70
Speed 1/min : 1180...1190
    per values ____
                                                       2nd c-rod trav.mm: 4.00
                                                                   1/min : 1285...1315
START OF DELIVERY
                                                         Speed
                                                                    1/min : 1400
Test pressure, bar: 25...27
                                                       4th speed
                                                         C-rod trav.mm : 0.00...1.00
```

N08

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 12...20
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 8.50
Speed
            1/min : 375
                : 8.20...8.40
: 2.00
C-rod trav.mm
C-rod trav.mm
CONSTANT REGULATION
Speed
            1/min: 375...485
SWITCH-OVER POINT
Speed
            1/min : 270 (290)
FUEL-DELIVERY CHARACTERISTICS
Del.quantity cm3/: 93.0...97.0
1000H.: (90.0...100.0)
Dispersion cm3/: 6.00
            1000H.: (9.00)
```

Remarks: \* = Set a

\* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6- 3- 5- 2- 4- 1 Test sheet Edition : MB 11,0 S 1 : 12.09.86 Superceeded SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 824 SD mark cyl. no. : 6 Injection pump Pump designation : PE6P110A320LS3835 BASIC SETTING EP type number : 0 411 816 749 Governor 1st speed 1/mi: 900 Governor design. : RQV300...900PA524-10 Contr.-rod trav.mm: 12.90...13.00 Governer no. : 0 421 813 549 Customer-spec. information Del.quantity cm3/: 12.6...12.8 Customer : DAIMLER-BENZ 100H.: (12.3...13.0) Engine : OM 441 Dispersion cm3/:0.41st version kW : 150.0 Speed 1/min: 1800 100H.: (0.8) TEST BENCH REQUIREMENTS 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.7...8.9
Del.quantity @m3/: 1.6...2.2
100H.: (1.3...2.4)
Dispersion cm3/: 0.4
100H.: (0.7) Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor SLEEVE TRAVELS Overflow 1st speed 1/min: 300 2nd speed 1/min: 800 quantity min. 1/h: 100...120 and speed Calibrating nozzle-holder 1/min: 1200 assembly : 0 681 343 009 4th speed 1/min: 1260 Opening SLEEVE POSITION pressure, bar : 172...175 Control-lever position Degree: -1 1/min: 920 Test inj. tubing : 1 680 750 015 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm 1st version 1/min: 900 Speed Del.quantity cm3/: 126.0...128.0 (A) Injection pump setting values 1000H.: (123.5...130.5) cm3/ : 4.00 1000H.: (8.00) Insp. values in parentheses Set constant delivery quant. Dispersion per values \_\_\_\_ START OF DELIVERY HIGHEST RATED SPEED Test pressure, bar: 25...27 1st version

Control-lever position degrees: 50...58 Testing: 1st c-rod trav.mm : 11.90 Speed 1/min: 955...965 2nd c-rod traw.mm : 4.00 Speed 1/min : 1010...1040 4th speed 1/min : 1100 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Testing: Speed 1/min: 100 C-rod trav.mm min: 9.50 Speed 1/min: 300 C-rod trav.mm : 8.00...8.20 CONSTANT REGULATION 1/min : 300...500 Speed SWITCH-OVER POINT 1/min : 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 600
Del.quantity cm3/: 124.0...128.0
1000H.: (121.0...131.0)
Dispersion cm3/: 6.00 1000H.: (8.00)

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6- 3- 5- 2- 4- 1 Test sheet : MB 11,0 S 2 Edition : 23.09.86 Superceeded SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 829 SD mark cyl. no. 3 6 Injection pump Pump designation : PE6P110A320LS3835 BASIC SETTING EP type number : 0 411 816 749 Governor 1st speed 1/mi: 950 Governor design. : RQ300/950PA827-1K Governer no. : 0 421 803 093 Contr.-rod trav.mm: 13.10...13.20 Customer-spec. information Del.quantity cm3/: 12.6...12.8 Customer : DAIMLER-BENZ 100H.: (12.3...13.0) Engine : 0M441 Dispersion cm3/:0.41st version kW : 150.0 Speed 1/min: 1900 100H.: (0.8) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.8...9.0 Del.quantity cm3/: 1.5...2.1 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C : 38...42 100H.: (1.2...2.3) cm3/: 0.4 Dispersion Overflow valve 100H.: (0.7) : 1 417 413 025 (B) Setting of injection pump with externally-mounted governor Inlet press., bar: 1.50 Overflow SLEEVE TRAVELS 1st speed 1/min: 300 quantity min. 1/h: 100...120 Sleeve travel mm: 1.60...1.80 1/min: 500 Calibrating nozzle-holder 2nd speed Sleeve travel mm: 5.50...5.70
3rd speed 1/min: 775 : 0 681 343 009 assembly Steeve travel mm: 6.50...6.80
4th speed 1/min: 950
Steeve travel mm: 7.50...7.80 Opening pressure, bar : 172...175 5th speed 1/min: 1100 Test inj. tubing : 1 680 750 015 Sleeve travel mm: 9.50...10.00 Outside diameter SLEEVE POSITION x Wald thickness Control-lever position : 6.00x1.50x600 Degree: -2 1/min: 600 x Length mm Speed Cont.-rod travelmm: 16.30...17.30 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values \_\_\_\_ 1st version 1/min: 950 START OF DELIVERY Speed Del.quantity cm3/: 126.0...128.0 1000H.: (123.5...130.5) Test pressure, bar: 25...27

```
Dispersion cm3/ : 4.00
              1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 32...40
Setting point:
Speed
             1/min : 600
Contr.-rod trav.mm: 16.8
Testing:
1st c-rod trav.mm : 12.10
  Speed 1/min: 995...1010
2nd c-rod trav.mm : 4.00
Speed 1/min: 1060...1090
4th speed 1/min: 1300
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Setting point w/out aux. spring
Speed
            1/min : 300
Contr.-rod trav.mm: 8.8
Testing:
Speed 1/min: 100
C-rod trav.mm min: 10.00
Speed 1/min: 300
                 : 8.80...8.99
C-rod trav.mm
C-rod trav.mm
                    : 2.00
             1/min : 400...440
Speed
TORQUE CONTROL
Dimension a mm
                    : 2.00
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 117.0...120.0
1000H.: (114.0...123.0)
Dispersion
              cm3/
                      6.00
             1000H.: (9.00)
1/min: 750
Speed
Del.quantity cm3/: 120.0...124.0
1000H.: (117.0...127.0)
             cm3/: 6.00
1000H: (9.00)
Dispersion
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6- 3- 5- 2- 4-Note inst. in remarks column Test sheet : MB 11,0 S 3 : 12.09.86 Edition Superceeded SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 830 SD mark cyl. no. : 6 Injection pump Pump designation : PE6P110A320LS3835 BASIC SETTING EP type number : 0 411 816 749 Governor 1st speed 1/mi: 950 Governor design. : RQV300...950PA829-1K Contr.-rod trav.mm: 13.10...13.20 Governer no. : 0 421 815 167 Customer-spec. information Del.quantity cm3/: 12.6...12.8 Customer : DAIMLER-BENZ 100H.: (12.3...13.0) Engine : 0M441 Dispersion cm3/:0.41st version kW : 150.0 1/min: 1900 100H.: (0.8) Speed TEST BENCH REQUIREMENTS 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.3...8.5 Del.quantity cm3/: 1.5...2.1 100H:: (1.2...2.3) Dispersion cm3/: 0.4 Calibrating-oil inlet temp. OC : 38...42 Overflow valve 100H.: (0.7) : 1 417 413 025 (B) Setting of injection pump with externally-mounted governor Inlet press., bar: 1.50 SLEEVE TRAVELS Overflow 1st speed 1/min: 300 quantity min. 1/h: 100...120 Sleeve travel mm: 1.60...1.80 1/min: 500 Calibrating nozzle-holder 2nd speed : 0 681 343 009 assembly 1/min: 775 3rd speed 1/min: 950 4th speed 5th speed 1/min: 1100 Opening pressure, bar : 172...175 SLEEVE POSITION Control-lever position Test inj. tubima : 1 680 750 015 Degree: -1 1/min: 975 Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness : 6.00x1.50x600 FULL-LOAD DELIV. AT FULL-LOAD STOP x Length mm (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ 1000H.: (8.00) START OF DELIVERY Test pressure, bar: 25...27 HIGHEST RATED SPEED N14

```
1st version
Control-lever
 position degrees: 57...65
Testing:
1st c-rod trav.mm : 12.10
            1/min : 995...1010
  Speed
2nd c-rod trav.mm : 4.00
              1/min: 1080...1110
  Speed
4th speed
              1/min : 1300
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 9...17
Testing:
              1/min : 100
Speed
C-rod trav.mm min : 10.00
Speed
             1/min : 300
C-rod trav.mm
                      : 8.30...8.50
CONSTANT REGULATION
              1/min : 300...450
Speed
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 975
1st speed
C-rod trav.mm : 13.10...13.20
2nd speed 1/min : 600
C-rod trav.mm : 12.90...13.10
3rd speed 1/min : 750
C-rod trav.mm : 13.10...13.30
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
Speed
              1/min : 600
Del.quantity cm3/: 117.0...120.0
1000H.: (114.0...123.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Speed 1/min: 750
Del.quantity cm3/: 118.0...122.0
1000H.: (115.0...125.0)
               cm3/:6.00
Dispersion
              1000H.: (9.00)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 : (3.95...4.15) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column Cam sequence : 6- 3- 5- 2- 4- 1 Test sheet : MB 11.0 S 4
Edition : 12.09.86
Superceeded : -SD ang. spacing<sup>0</sup>CS: 0-45-120-165-240-285 Tolerance + - 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 830 SD mark cyl. no. : 6 Injection pump Pump designation : PE6P110A320LS3835 BASIC SETTING EP type number : 0 411 816 749 Governor 1st speed 1/mi: 950 Governor design. : RQV300...950PA829K Governer no. : 0 421 815 166 Contr.-rod trav.mm: 13.10...13.20 Del.quantity cm3/ : 12.6...12.8 Customer-spec. information Customer : DAIMLER-BENZ 100H.: (12.3...13.0) Engine : 0M441 cm3/:0.4Dispersion 1st version kW : 150.0 1/min: 1900 Speed 100H.: (0.8) TEST BENCH REQUIREMENTS 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.3...8.5 Del.quantity cm3/: 1.5...2.1 100H.: (1.2...2.3) Salibrating-oil inlet temp. °C : 38...42 cm3/: 0.4 100H.: (0.7) Dispersion Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor Overflow SLEEVE TRAVELS 1st speed 1/min: 300 quantity min. 1/h: 100...120 Sleeve travel mm: 1.10...1.30 Calibrating nozzle-holder 2nd speed 1/min: 500 Sleeve travel mm: 3.20...3.40 assembly : 0 681 343 009 3rd speed 1/min: 800 Sleeve travel mm: 5.90...6.10 Opening pressure, bar : 172...175 4th speed 1/min: 1000 Sleeve travel mm: 8.00...8.40 5th speed 1/min: 1125 Sleeve travel mm: 9.60...10.00 Test inj. tubing : 1 680 750 015 Outside diameter SLEEVE POSITION x Wall thickness Control-lever position : 6.00x1.50x600 x Length mm Degree: -1 17min: 975 Speed Cont.-rod travelmm: 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values \_\_\_\_ 1st version START OF DELIVERY Speed 1/min: 950 Del.quantity cm3/: 126.0...128.0 Test pressure, bar: 25...27 1000H.: (123.5...130.5)

```
Dispersion cm3/ : 4.00
              1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 57...65
Testing:
1st c-rod trav.mm : 12.10
Speed 1/min: 995...1010
2nd c-rod trav.mm: 4.00
            1/min : 1080...1110
1/min : 1300
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 9...17
Testing:
              1/min : 100
Speed
C-rod trav.mm min : 10.00
Speed 1/min : 300
                   : 8.30...8.50
C-rod trav.mm
CONSTANT REGULATION
Speed
              1/min : 300...450
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 975
1st speed
  C-rod trav.mm : 13.10...13.20
              1/min : 600
2nd speed
  C-rod trav.mm : 12.90...13.10
3rd speed 1/min: 750
  C-rod trav.mm : 13.10...13.30
SWITCH-OVER POINT
Speed
             1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/ : 117.0...120.0
              1000H.: (114.0...123.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Speed 1/min: 750
Del.quantity cm3/: 118,0...122.0
1000H.: (115.0...125.0)
Dispersion
              cm3/:6.00
              1000H.: (9.00)
```

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6- 3- 5- 2- 4- 1 Test sheet : MB 11,0 S 5 Edition : 06.10.86 Superceeded SD ang. spacing CS: 0-45-129-165-240-285 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 833 SD mark cyl. no. : 6 Injection pump Pump designation : PE6P110A320LS3835 BASIC SETTING EP type number : 0 411 816 749 Governor 1st speed 1/mi: 900 Governor design. : RQ300/900PA827-2K Contr.-rod trav.mm: 13.60...13.70 Governer no. : 0 421 803 094 Del.quantity cm3/: 13.3...13.5 Customer-spec. information Customer : DAIMLER-BENZ 100H.: (13.0...13.7) Engine : OM441 Dispersion cm3/:0.41st version kW : 150.0 1/min: 1800 Speed 100H.: (0.8) TEST BENCH REQUIREMENTS 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)

Dispersion cm3/: 0.4
100H.: (0.7) Calibrating-oil inlet temp. C : 38 . . . 42 Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor Overflow SLEEVE TRAVELS 1st speed 1/min: 300
Sleeve travel mm: 1.60...1.80
2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70 quantity min. 1/h: 100...120 Calibrating nozzle-holder assembly : 0 681 343 009 3rd speed 1/min: 775 Opening Sleeve travel mm: 6.50...6.80 pressure, bar : 172...175 4th speed 1/min: 880 Sleeve travel mm: 7.50...7.80 5th speed 1/min: 930 Test inj. tubing : 1 680 750 015 Sleeve travel mm: 9.50...10.10 Outside diameter SLEEVE POSITION Control-lever position x Wall thickness : 6.00x1.50x600 x Length mm Degree: -2 17min: 600 Cont.-rod travelmm: 16.30...17.30 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values 1st version START OF DELIVERY 1/min: 900 Speed Del.quantity cm3/: 133.0...135.0 Test pressure, bar: 25...27 1000H.: (130.5...137.5)

```
Dispersion cm3/ : 4.00
             1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 32...40
Setting point:
             1/min : 600
Speed
Contr.-rod trav.mm: 16.8
Testing:
1st c-rod trav.mm : 12.70
           1/min : 945...960
  Speed
2nd c-rod trav.mm : 4.00
            1/min : 990...1020
  Speed
4th speed 1/min : 1300
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Setting point w/out aux. spring
            1/min : 300
Speed
Contr.-rod trav.mm: 8.8
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 10.00
Speed 1/min: 300
                 : 8.80...8.90
C-rod trav.mm
C-rod trav.mm
                    : 2.00
             1/min: 400...440
Speed
TORQUE CONTROL
Dimension a mm
                  : 2.00
FUEL-DELIVERY CHARACTERISTICS
Speed
             1/min : 600
Del.quantity cm3/: 123.0...126.0
1000H.: (120.0...129.0)
Dispersion cm3/: 6.00
             1000H.: (9.00)
1/min : 750
Speed
Del.quantity cm3/: 127.0...131.0
             1000H.: (124.0...134.0)
cm3/: 6.00
1000H.: (9.00)
Dispersion
Remarks:
```

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Prestroke mm
Note inst. in remarks column
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 6- 3- 5- 2- 4- 1
Test sheet
Edition
Superceeded
                    : MB 11,0 S 6
                   : 06.10.86
Calibrating oil : ISO-4113
                                                       SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Combination no. : 0 401 846 834
                                                       SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3835
                                                       BASIC SETTING
EP type number : 0 411 816 749
Governor
                                                                    1/mi: 1050
                                                       1st speed
Governor design. : RQ300/1050PA827-4K
Governer no. : 0 421 803 096
                                                       Contr.-rod trav.mm: 13.30...13.40
Customer-spec. information
                                                       Del.quantity cm3/: 13.9...14.1
Customer
                   : DAIMLER-BENZ
                                                                      100H.: (13.6...14.3)
Engine
                    : 0M441
                                                       Dispersion
                                                                      cm3/:0.4
1st version kW : 160.0
             1/min: 2100
Speed
                                                                      100H.: (0.8)
TEST BENCH REQUIREMENTS
                                                       2nd speed
                                                                      1/min: 300.0
                                                       Contr.-rod trav. m: 8.8...9.0
Del.quantity cm3/: 1.5...2.1
100H:: (1.2...2.3)
Dispersion cm3/: 0.4
100H:: (0.7)
Calibrating-oil inlet temp. °C : 38...42
Overflow valve
                    : 1 417 413 025
                                                       (B) Setting of injection pump with
Inlet press., bar: 1.50
                                                           externally-mounted governor
Overflow
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 300
Sleeve travel mm: 1.60...1.80
2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
 assembly : 0 681 343 009
                                                       3rd speed
                                                                    1/min: 900
                                                         Sleeve travel mm: 7.00...7.30
Opening
pressure, bar : 172...175
                                                       4th speed 1/min: 1050
                                                         Sleeve travel mm: 7.60...7.90
                                                       5th speed 1/min: 1100
Sleeve travel mm: 9.50...10.00
Test inj. tubing : 1 680 750 015
Outside diameter
                                                       SLEEVE POSITION
                                                       Control-lever position
x Wall thickness
                  : 6.00x1.50x600
x Length mm
                                                                    Degree: -2
                                                                     17min: 600
(A) Injection pump setting values
                                                       Cont.-rod travelmm: 16.30...17.30
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                       1st version
START OF DELIVERY
                                                                     1/min: 1050
                                                       Speed
Test pressure, bar: 25...27
                                                       Del.quantity cm3/: 139.0...141.0
                                                                    1000H.: (136.5...143.5)
```

```
Dispersion cm3/: 4.00
1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 32...40
Setting point:
Speed
              1/min: 600
Contra-rod trav.mm: 16.8
Testing:
1st c-rod trav.mm : 12.30
           1/min : 1095...1110
  Speed
2nd c-rod trav.mm : 4.00
Speed 1/min: 1160...1190
4th speed 1/min: 1300
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Setting point w/out aux. spring
             1/min : 300
Speed `
Contr.-rod trav.mm: 8.8
Testing:
Speed
              1/min : 100
C-rod trav.mm min: 10.00
Speed 1/min: 300
C-rod trav.mm : 8.80...8.90
                     : 2.00
C-rod trav.mm
              1/min : 400...440
Speed
TORQUE CONTROL
                     : 2.00
Dimension a mm
FUEL-DELIVERY CHARACTERISTICS
              1/min : 600
Speed
Del.quantity cm3/: 124.0...127.0
1000H.: (121.0...130.0)
              cm3/: 6.00
1000H: (9.00)
Dispersion
              1/min: 900
Speed
Del.quantity cm3/: 130.0...134.0
1000H.: (127.0...137.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.40...3.50 : (3.35...3.55) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 8- 7- 2- 6- 3- 5-Note inst. in remarks column Test sheet : MB 12,8 N 2 Edition : 12.09.86 Superceeded : 2.83 Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-90-135-180-225-270-315 : 0 401 848 073 Combination no. Tolerance + - 0 : 0.50 (0.75) Injection pump Pump designation : PE8P100A320LS819 SD mark cyl. no. : 8 EP type number : 0 411 808 052 Governor BASIC SETTING Governor design.: RQV350...1250PA378R Governer no. : 0 421 813 197 1st speed 1/mi: 1230 Customer-spec. information Contr.-rod trav.mm: 10.30...10.40 : DAIMLER-BENZ Customer Del.quantity cm3/: 10.0...10.2 : OM 402 Engine 100H.: (9.8...10.4) 1st version kW : 188.3 Dispersion cm3/:0.3TEST BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. C 2nd speed 1/min: 350.0 Contr.-rod trav. m: 7.5...7.7 Del.quantity cm3/: 2.0...2.4 100H.: (1.7...2.6) : 38...42 Overflow valve : 1 417 413 025 Dispersion cm3/:0.3100H.: (0.5) Inlet press., bar : 1.50 Over flow SLEEVE POSITION quantity min. 1/h: 100...110 1/min: 1250 Speed Cont.-rod travelmm: 15.20...17.80 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version pressure, bar : 172...175 1/min: 1230 Speed Del.quantity cm3/: 100.0...102.0 1000H.: (98.0...104.0) cm3/ : 3.00 Test inj. tubing : 1 680 750 015 Dispersion 1000H.: (6.00) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00X1.50X600 1st version Control-lever (A) Injection pump setting values position degrees: 61...69 Insp. values in parentheses Set constant delivery quant. Testing: per values \_\_\_\_ 1st c-rod trav.mm: 9.30 1/min : 1280...1290 Speed 2nd c-rod trav.mm: 4.00 START OF DELIVERY 1/min : 1360...1390 1/min : 1500 Test pressure, bar: 25...27 Speed 4th speed C-rod trav.mm : 0.00...1.03

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20

Testing:

Speed 1/min: 100 C-rod trav.mm min: 9.20 Speed 1/min: 350 C-rod trav.mm: 7.50...7.70

CONSTANT REGULATION

1/min : 400...600 Speed

SWITCH-OVER POINT

1/min : 270 (290) Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 1230
Del.quantity cm3/: 73.0...75.0
1000H.: (71.0...77.0)

\* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 4.00...4.10 : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column : 8- 7- 2- 6- 3- 5-Cam sequence Test sheet : MB 14,6 F Edition : 12.09.86 Superceeded : 3.85 Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-90-135-180-225-270-315 Combination no. : 0 401 848 734 Tolerance + - 0 : 0.50 (0.75) Injection pump Pump designation : PE8P12OA320LS3811-10 SD mark cyl. no. : 8 EP type number : 0 411 828 714 Governor BASIC SETTING Governor design. : RQ300/1150PA556 Governer no. : 0 421 801 137 1st speed 1/mi: 1150 Customer-spec. information Contr.-rod trav.mm: 10.40...10.50 Cus tomer ARESEELSELABSUSEELS : DAIMLER-BENZ Del.quantity cm3/: 16.2...16.4 Engine : 0M422A 100H.: (15.9...16.7) 1st version kW : 242.7 1/min: 2300 cm3/:0.5Speed Dispersion TEST BENCH REQUIREMENTS 100H.: (0.8) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 5.0...5.2 Del.quantity cm3/: 1.4...2.2 100H.: (1.1...2.5) Dispersion cm3/: 0.8 100H.: (1.2) Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 SLEEVE POSITION Control-lever position Calibrating nozzle-holder Degree: -2 1/min: 600 assembly : 1 688 901 019 Cont.-rod travelmm: 14.70...16.30 Opening pressure, bar : 207...210 FULL-LOAD DELIV. AT FULL-LOAD STOP Perforated-plate : 0,8 diameter mm 1st version Speed 1/min: 1150 Del.quantity cm3/: 162.0...164.0 1000H.: (159.0...167.0) cm3/: 5.00 1000H.: (8.00) Test in j. tubing : 1 680 750 067 Dispersion Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm HIGHEST RATED SPEED (A) Injection pump setting values Setting point: Insp. values in parentheses Set constant delivery quant. 1/min : 600 Contr.-rod trav.mm: 15.5 per values \_\_\_\_ Testing: 1st c-rod trav.mm : 9.40 Speed 1/min : 1195...1210 START OF DELIVERY 2nd c-rod trav.mm : 4.00

Speed 1/min: 1215...1245

LOWEST RATED SPEED I

Setting point w/out aux. spring Speed 1/min: 300

Contr.-rod trav.mm: 4.6

Testing:

Speed 1/min: 100 C-rod trav.mm min: 6.20 Speed 1/min: 300

C-rod trav.mm : 4.50...4.70 C-rod trav.mm : 2.00 Speed 1/min : 320...360

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/: 152.0...158.0 1000H.: (149.0...161.0) Dispersion cm3/: 8.00 1000H.: (12.00

**APPLICATION** 

**Omnibus** 

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column : 8- 7- 2- 6- 3- 5-Cam sequence Test sheet : MB 14,6 A 1
Edition : 12.09.86
Superceeded : 5.85 Superceeded : 5.85 Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-90-135-180-225-Combination no. : 0 401 848 755 270-315 Tolerance + - 0 : 0.50 (0.75) Injection pump Pump designation : PE8P110A320L\$3802 SD mark cyl. no. : 8 EP type number : 0 411 818 705 BASIC SETTING Governor Governor design. : RQ300/1150PA437-3 Governer no. : 0 421 801 230 1st speed 1/mi: 1150 Customer-spec. information Contr.-rod trav.mm: 11.00...11.10 Customer : DAIMLER-BENZ Del.quantity cm3/: 11.3...11.5 Engine : 0M422 100H.: (11.0...11.7) 1st version kW : 184.0 cm3/:0.4Speed 1/min: 2300 Dispersion TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. C 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.5...8.7

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/: 0.4

100H.: (0.7) : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 SLEEVE POSITION Over flow Control-lever position quantity min. 1/h: 100...120 Degree: -1 17min: 650 Calibrating nozzle-holder Cont.-rod travelmm: 13.20...14.00 : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version 1/min: 1150 Speed Del.quantity cm3/: 113.0...115.0 1000H.: (110.5...117.5) Dispersion cm3/: 4.00 Test inj. tubing : 1 680 750 015 Outside diameter 1000H.: (8.00) x Wall thickness x Length mm : 6.00x1.50x600 HIGHEST RATED SPEED (A) Injection pump setting values Setting point: Insp. values in parentheses Set constant delivery quant. Speed 1/min : 650 Contr.-rod trav.mm: 13.6 per values \_\_\_\_ Testing: START OF DELIVERY 1st c-rod trav.mm : 10.00 Speed 1/min: 1195...1210 Test pressure, bar: 25...27 2nd c-rod trav.mm : 4.00 N26

1/min : 1260...1290 1/min : 1350 Speed 4th speed

C-rod trav.mm : 0.00...1.50

LOWEST RATED SPEED I

Secting point w/out aux. spring

Speed 1/min: 300 Contractor trav.mm: 7.1

Testing:

1/min : 100 Speed C-rod trav.mm min: 8.50

Speed 1/min: 300 C-rod trav.mm: 7.00...7.20 C-rod trav.mm: 2.00

1/min : 400...440 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1150 C-rod trav.mm: 11.00...11.10 2nd speed 1/min: 600

C-rod trav.mm : 11.20...11.40

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 600

Del.quantity cm3/: 92.0...96.0

1000H: (89.0...99.0) cm3/: 6.00 1000H: (9.00) Dispersion

Remarks: